

Date: 1<sup>st</sup> Nov 2021  
SMH Ref: SMH-WS-Q-2021-070

## Technical Proposal

**Attention:**

**Mr. Mustafa Syed**  
Contracts Engineer  
Saudi Chevron Phillips Co. (S-Chem)  
Al-Fanateer Square, Chamber of Commerce Building, 5th Floor- 512  
Jubail, Kingdom of Saudi Arabia  
Fax: +966 13 358 2208  
Tel: 96613 359 6567  
Email: [syedm@saudichevron.com](mailto:syedm@saudichevron.com)

**Subject:** Site Execution Services for Inspection and Overhaul on Extruder Machines at Unit 42, 43 & 44- SPCO-TAM-2022.

**Your Ref#:** RFQ#25000942

**Dated:** 20<sup>th</sup> October 2021

Dear Sir,

Thank you very much for providing us an opportunity to quote for the subjected services.

We hereby would like to submit our Technical Proposal for "Site Execution Services for Inspection and Overhaul on Extruder Machines at Unit 42, 43 & 44- SPCO-TAM-2022." as per E-mail- Rfq# 25000942 dated 20<sup>th</sup> October 2021.

We hope our proposal suits your requirements, please do not hesitate to contact us for any further clarifications if required.

Assuring you of our best attention and prompt service at all times and look forward to your further instructions.

Thanks and Best Regards,

  
John Ullas Davis

Manager- Techno-Commercial  
Landline: +966 13 342 0505/ Ext. 200  
Mobile: +966 50 544 7657, 53 126 9970  
Email: [johns.davis@smharabia.com](mailto:johns.davis@smharabia.com)



## SUMMARY

### 1. TECHNICAL PROPOSAL

- 1.1 SMH TECHNICAL PROPOSAL.....
- 1.2 RESOURCE LOADING CHART .....
- 1.3 METHOD OF STATEMENTS.....
- 1.4 EQUIPMENT LOADING CHART.....
- 1.5 MANPOWER LOADING CHART.....
- 1.6 PRELIMINARY BAR CHART .....
- 1.7 ORGANIZATION CHART .....
- 1.8 IMS MANNUAL.....
- 1.9 EHS PLAN.....
- 1.10 SAFETY STATISTICS (LAST 3 YEARS).....

### 2. SMH EXPERIENCE LIST

- 2.1 EXTRUDER WORK HISTORY.....
- 2.2 SMH OVERALL WORKING EXP.....

### 3. COMMERCIAL PROPOSAL (UNPRICED)

## TECHNICAL PROPOSAL

**Subject:** Site Execution Services for Inspection and Overhaul on Extruder Machines at Unit 42, 43 & 44- SPCO-TAM-2022.  
**Customer Ref#:** RFQ# 25000942  
**Dated:** 20<sup>th</sup> October 2021

### RESPONSIBILITIES:

#### • SMH Industrial Services Co. Ltd.

1. SMH shall perform the Scope of Work as described and detailed in as per SOW file **Exhibit I** received via E-mail dated 20<sup>th</sup> October 2021. The services include access to the equipment and execution of all mechanical activities related thereto Site Execution Services for Inspection and Overhaul on Extruder Machines at Unit 42, 43 & 44- SPCO-TAM-2022.
2. SMH shall use competent crew including, Supervisor, Millwright Technicians, Safety officers and other related high-skilled and semi-skilled personnel who will ensure the smooth execution of the servicing requirement.
3. SMH shall provide continuous 24-hours coverage in two shifts to perform its required services for executing the work.
4. SMH shall comply with all the COVID-19 protocols as described in the SOW file and under the guidelines of Ministry of Health.
5. SMH shall provide small crew during start-up and commissioning phase for 3 days to facilitate SCHEM for smooth start-up of equipment. Beyond 3 days if required, time sheet based charges will be applicable for the crew and resources stationed at site.
6. SMH shall assign its Saudi nationality representative who will be coordinating with SCHEM ISD for the gate-pass processing. Upon the completion of project he shall return back all the gate-passes, IDs to SCHEM ISD department.
7. SMH shall provide Safety Officers as per SCHEM standard ratio 1:20 working personnel and ensure at all times to perform its jobs with utmost safety of personnel, equipment etc. and complete the job with best quality within the stipulated timeframe.
8. SMH shall provide qualified Safety officers, Permit Receivers, FW/HW and Standby man as required however SCHEM shall provide training schedules 4 weeks before SD including Safety Officer Interviews, if required.
9. SMH shall plan, schedule and track the daily shift-wise progress of the work activities based on SCHEM schedule ensuring timely completion and delivery of all the equipment.
10. SMH shall mobilize its tool containers and spare container (for materials) comprising of Standard Mechanical and Rigging Tools, Standard Measuring Tools such as Alignment Kits, Dial Gauges, Micrometer, Vernier Caliper etc. as required for its personnel during execution of the job. However, all special tools recommended by OEM shall be arranged by SCHEM.



11. SMH shall provide all standard consumables as required. However, SCHEM should be responsible to arrange all OEM recommended special consumables, if any.
12. SMH shall mobilize Boom Truck/Dyna Truck, Pick-up for transportation of parts/equipment inside and outside plant as & when required.
13. SMH shall mobilize Tool container, Air Compressor, Tower lights, Hydro Jetting machine (40,000 PSI), Hydro torqueing machine and portable Power Generator for smooth execution of work.
14. SMH shall be responsible for all kinds of hydro jetting services Bolt Torque values and Belt tension values whenever required
15. SMH shall provide a desktop computer with a Wi-Fi connection for email communication and reporting.
16. SMH shall also provide the Pallets and wooden blocks as required during the job execution.
17. SMH shall mobilize 2 no's of Mobile crane (90 Ton), 2 no's of Low bed trailer, 2 no's of Man lift, Forklifts (5 Ton & 12 Ton), etc. as and when required for all lifting and shifting activities to facilitate overhauling services as well as for site Mobilization and Demobilization of SMH temporary facilities.
18. SMH shall verify availability of all critical spares, Special Tools in close coordination with SCHEM after the receipt of PO or 1 months before TAM
19. SMH shall provide basic Personal Protective Equipment (PPE) for all its personnel, however, any special PPE for confined space entry should be provided by SCHEM.
20. SMH shall provide Food, Accommodation and Transportation for all SMH personnel.
21. SMH shall practice good house-keeping and shall ensure the cleanliness and orderliness during execution of job.
22. SMH shall submit a final/detailed reports for the job carried out in soft copy and as well as hard copy within two weeks from the date of job completion to SCHEM.

#### • SCHEM

1. Confirmation of job award in writing either by fax or mail, before any mobilization in the form of Purchase Order, Service Order, Letter of Award, etc. clearly accepting the quotation's terms and conditions at least 2 months prior to mobilization date.
2. SCHEM shall issue the IDs, Permits and/or Gate passes for SMH personnel, equipment & vehicle for transport as required.
3. SCHEM shall conduct necessary briefing on HSE Procedure for all SMH personnel.
4. SCHEM shall provide training and orientation for Permit Receivers, Fire Watchmen and Standby Man/Manhole Watchman.
5. SCHEM shall inspect all the SMH equipment, tools and vehicles and shall issue the gate-pass and inspection stickers.
6. SCHEM shall provide adequate space located near the plant site to serve as lay-down area for SMH tool containers, boxes and equipment.



7. SCHEM shall provide all special tools and special consumables recommended by OEM for the equipment in order to facilitate overhauling services as required.
8. SCHEM shall provide OEM Manual and drawings for execution of job.
9. SCHEM shall allocate adequate space near the site for carrying out overhauling activities.
10. SCHEM shall provide all required new spare parts for each equipment overhauling, in case of re-use of removed spare parts due to non-availability of new one then SCHEM shall be responsible for reliability and re-work if arises.
11. SCHEM shall provide EOT crane and access to SMH personal to utilize it at the time of execution.
12. SCHEM should take care of the system side blinding/de-blinding. All the materials for Blinding/De-blinding for Equipment (Gasket, bolts and blinds) to be provided by SCHEM.
13. SCHEM shall be responsible for all Electrical and instrument related activities.
14. SCHEM shall be responsible for Scaffolding & Insulation services provide access platforms and scaffoldings for equipment in coordination with SMH.
15. SCHEM shall provide Office Container, Mess hall and toilet facilities for SMH personnel working at site as well as workshop during the overhauling activities.
16. SCHEM shall provide its utilities namely Water, Compressed Air and Electricity, lightings from the nearest point as required by SMH for performing the activities.
17. SCHEM shall assign an in-charge from their side to coordinate with SMH. He will also monitor quality control of all activities in close coordination with SMH.
18. SCHEM shall be responsible for all NDT services like DPT, MPT, UT whenever required.
19. SCHEM shall be responsible for Demagnetization services of removed parts if required.
20. SCHEM shall be responsible for the collection and disposal of waste oil whenever required.
21. SCHEM shall arrange liquid nitrogen & Dry ice whenever required to complete the overhauling activities.
22. SCHEM shall perform for all kind of hot work (tack welding, drilling, grinding, heating etc.) as and when required during execution.
23. SCHEM shall provide adequate area for Hydro jetting with the provision of Jetting water, Heavy lifting and drainage.
24. SCHEM shall be responsible for disposal of Jetting water.
25. SCHEM shall confirm additional works with a firm PO or may confirm in writing via email/fax by the Contracts Department prior to its execution.
26. SCHEM shall issue the Completion Certificate upon successful completion of Work.

#### **WORK DURATION:**

|                            |                       |                                                                                                  |
|----------------------------|-----------------------|--------------------------------------------------------------------------------------------------|
| ➤ Pre-Shutdown:            | 3 Days                | } <b>24 hours / day</b><br>Day Shift: 06:00 AM to 06:00 PM<br>Night Shift: 06:00 PM to 06:00 AM. |
| ➤ Mechanical Spanner Days: | <b><u>30 Days</u></b> |                                                                                                  |
| ➤ Startup Assistance:      | 3 Days                |                                                                                                  |

#### NOTES:

1. This proposal is submitted for the job schedule on October-2022. Any change in the schedule after the issuance of PO, has to be confirmed from SMH side for availability in the revised schedule dates.
2. SCHEM shall intimate SMH, equipment handover dates via email at least 60 Days before the actual TAM Start date
3. The work duration is suggested considering that there shall be no delay on the delivery of materials, spare parts, Instructions, Information and /or services from client and that no emergent work or unforeseen conditions at the time of execution shall arise which can affect the overall timeline of any or all of the activities.
4. If SMH manpower and equipment are held up at site due to any reason not attributable to SMH beyond the above stipulated schedule then the same shall be charged extra based on unit rates as provided in Commercial Proposal.
5. SMH manpower and equipment shall be demobilized from site post mechanical spanner days and small crew with basic tools shall be available for start-up support. Any resources required at site during idle days i.e. between mechanical spanner and start-up days shall be treated as additional and charged at actuals on unit rates based on timesheet.

#### SCOPE OF WORK:

Site Execution Services for Inspection And Overhaul On Extruder Machines At Unit 42, 43 & 44.

| S. No | PLANT      | UNIT | EQUIPMENT       | MAKE       | DESCRIPTION |
|-------|------------|------|-----------------|------------|-------------|
| 1     | SPCO-South | 42   | GEAR BOX        | SUPREX     | Major OH    |
|       |            |      | PROCESS SECTION | COPERION   | Major OH    |
|       |            |      | PELLET DYER     | CARTER DAY | Major OH    |
| 2     | SPCO-South | 43   | GEAR BOX        | SUPREX     | Major OH    |
|       |            |      | PROCESS SECTION | COPERION   | Major OH    |
|       |            |      | PELLET DYER     | CARTER DAY | Major OH    |



|   |            |    |                 |            |          |
|---|------------|----|-----------------|------------|----------|
| 3 | SPCO-South | 44 | GEAR BOX        | FLENDER    | Major OH |
|   |            |    | PROCESS SECTION | COPERION   | Major OH |
|   |            |    | PELLET DYER     | CARTER DAY | Major OH |

#### **NOTES:**

1. Due to ongoing COVID-19 issue, it is highly expected that there will be limitations on work as per latest Govt. Regulations during Curfew, Friday/Saturday, however, any delays due to such Rules and Regulations which are beyond control of SMH shall be considered unaccountable and informed to SCHEM well in advance.
2. Any observation or issues found during the job progress shall be reported to SCHEM immediately. SMH shall not take any action unless SCHEM approval/clearance.
3. Any job that arises during the execution not specifically mentioned in initial SOW, which becomes necessary for completion of activities will be quoted as additional job and shall be executed upon Client's confirmation.
4. Any part or component repair/ refurbishment work including Engineering, Drafting, Specialist processes, machining, welding etc. which may be found necessary as a result of inspection during execution, unless specifically mentioned in the SOW shall be responsibility of the client. However in case if such jobs are required to be performed by SMH then additional cost at actuals plus handling charges with actual timelines shall be provided for SCHEM approval. Also in such scenario if SMH resources needs to be kept idle at site during this repair/refurbishment phase shall be charged on unit rate basis as provided in Commercial Proposal.
5. Any In-situ Machining, Drilling, tapping if arises during dismantling of specific components or which requires any Third Party Specialized Services, which is not a part of Standard Maintenance Procedures, shall be Client's responsibility. However, in case if such jobs are required to be performed by SMH then additional cost at actuals plus handling charges with actual timelines shall be provided for SCHEM approval.
6. Any scope deletion or equipment is removed from original SOW after mobilization shall not be considered and charged in full for the deleted equipment/scope. If it is decided post award of PO but before site mobilization then Cancellation Clause mentioned in Commercial Proposal shall be applicable.

-----END OF DOCUMENT-----





SMH INDUSTRIAL SERVICES COMPANY LTD.  
RFP- REQ 25000942 Site Execution Service ,Inspection And Overhaul On Extruder Machines (SPCo TA 2022) Rev 01  
RESOURCE LOADING CHART rev00

DIRECT MANPOWER LOADING:

| S. No                 | PLANT | UNIT | EQUIPMENT       | MAKE       | DESCRIPTION | GROUP | SHIFTS | SUPERVISOR | LEAD/FOREMAN | MILLWRIGHT | FITTER | RIGGER II | TOTAL MANPOWER |
|-----------------------|-------|------|-----------------|------------|-------------|-------|--------|------------|--------------|------------|--------|-----------|----------------|
| 1                     | SPCO  | 42   | GEAR BOX        | SUPREX     | Major OH    | A     | DAY    | 1          | 1            | 3          | 2      | 1         | 13             |
|                       |       |      |                 |            |             |       | NIGHT  |            | 1            | 2          | 1      | 1         |                |
|                       |       |      | PROCESS SECTION | COPERION   | Major OH    | B     | DAY    | 1          | 1            | 4          | 3      | 2         | 17             |
|                       |       |      |                 |            |             |       | NIGHT  |            |              | 3          | 2      | 1         |                |
|                       |       |      | PELLET DYER     | CARTER DAY | Major OH    | C     | DAY    |            | 1            | 2          | 1      |           | 7              |
|                       |       |      |                 |            |             |       | NIGHT  |            | 1            | 1          | 1      |           |                |
| 2                     | SPCO  | 43   | GEAR BOX        | SUPREX     | Major OH    | D     | DAY    | 1          | 1            | 3          | 2      | 1         | 13             |
|                       |       |      |                 |            |             |       | NIGHT  |            | 1            | 2          | 1      | 1         |                |
|                       |       |      | PROCESS SECTION | COPERION   | Major OH    | E     | DAY    |            | 1            | 4          | 3      | 2         | 16             |
|                       |       |      |                 |            |             |       | NIGHT  |            |              | 3          | 2      | 1         |                |
|                       |       |      | PELLET DYER     | CARTER DAY | Major OH    | F     | DAY    |            | 1            | 2          | 1      |           | 7              |
|                       |       |      |                 |            |             |       | NIGHT  |            | 1            | 1          | 1      |           |                |
| 3                     | SPCO  | 44   | GEAR BOX        | FLENDER    | Major OH    | G     | DAY    | 1          | 1            | 3          | 2      | 1         | 13             |
|                       |       |      |                 |            |             |       | NIGHT  |            | 1            | 2          | 2      |           |                |
|                       |       |      | PROCESS SECTION | COPERION   | Major OH    | H     | DAY    |            | 1            | 3          | 3      | 1         | 14             |
|                       |       |      |                 |            |             |       | NIGHT  |            | 1            | 2          | 2      | 1         |                |
|                       |       |      | PELLET DYER     | CARTER DAY | Major OH    | I     | DAY    |            | 1            | 2          | 1      |           | 4              |
|                       |       |      |                 |            |             |       | NIGHT  |            |              |            |        |           |                |
|                       |       |      |                 |            |             |       |        |            |              |            |        |           | 0              |
|                       |       |      |                 |            |             |       |        |            |              |            |        |           | 0              |
| TOTAL DIRECT MANPOWER |       |      |                 |            |             |       |        | 4          | 15           | 42         | 30     | 13        | 104            |

INDIRECT MANPOWER LOADING:

| S. No                                  | Description          | Qty. |
|----------------------------------------|----------------------|------|
| 1                                      | Site Incharge        | 2    |
| 2                                      | Planning Engineer    | 1    |
| 3                                      | QC                   | 1    |
| 4                                      | Safety Officer       | 5    |
| 5                                      | Material Coordinator | 1    |
| 6                                      | PTW                  | 2    |
| 7                                      | Site Coordinator     | 1    |
| 8                                      | Welder               | 1    |
| 9                                      | Rigger-1             | 1    |
| 10                                     | FW/HW                | 2    |
| 11                                     | Machinist            | 1    |
| 12                                     | Store Keeper         | 1    |
| 13                                     | Office boy/Flag man  | 1    |
| 14                                     | Instrument Tech      | 0    |
| 15                                     | Electrician          | 2    |
| TOTAL INDIRECT MANPOWER                |                      | 22   |
| GRAND TOTAL (DIRECT+INDIRECT) MANPOWER |                      | 126  |

FOR OVERALL PROJECT

EQUIPMENT & OTHER RESOURCE LOADING:

| S. No | Description                                       | Qty. |
|-------|---------------------------------------------------|------|
| 1     | Tools & Consumable Container                      | 1    |
| 2     | Rigging Tools Container                           | 1    |
| 3     | Alignment Kit-Rotalign                            | 2    |
| 4     | Heating set                                       | 2    |
| 5     | Pick Up                                           | 1    |
| 6     | Food Van ( Day and Night)                         | 1    |
| 7     | Hiace(Day and night)                              | 1    |
| 8     | Coaster( Day and night)                           | 3    |
| 9     | Hydroseeding Crew                                 | 2    |
| 10    | Generator 35/50 KVA                               | 4    |
| 11    | Air Compressor 400 CFM                            | 3    |
| 12    | Material Container                                | 1    |
| 13    | Mobile crane 90 Ton                               | 2    |
| 14    | Man Lift                                          | 2    |
| 15    | 40 Feet Trailer for Mob & Demob                   | 2    |
| 16    | 40 Feet Low bed Trailer at site                   | 2    |
| 17    | Hydro torquing crew                               | 4    |
| 18    | Boom Truck                                        | 1    |
| 19    | Fork Lift 12 Ton                                  | 1    |
| 20    | Tower Light                                       | 3    |
| 21    | Diesel Tanker                                     | 1    |
| 22    | Crane 50 Ton for loading and unloading @ workshop | 1    |

FOR OVERALL PROJECT

## METHOD STATEMENT FOR GEAR BOX OVERHAULING

Equipment description: EXTRUDER GEAR BOX

MAKE & TYPE: RENK, FLENDER

EQUIPMET TAG #: 42V80, 43V80, 44V80,

| Rev.                                               | Date | By | Checked                  | Approval                                            | Revision Reasons for Issue description |               |
|----------------------------------------------------|------|----|--------------------------|-----------------------------------------------------|----------------------------------------|---------------|
|                                                    |      |    |                          |                                                     |                                        |               |
| SCHEM Reference:<br>REQ 25000942                   |      |    | Plant/Unit<br>SPCO/SOUTH | Project start date:<br>OCT-2022                     | Rev No.<br>00                          | Page # 1 of 6 |
| SMH Project No:<br>SMH/TECH/SCHEM/MOS/2022/1006/02 |      |    |                          | Turn around/Shutdown Project<br>Turn around Project |                                        |               |



## TABLE OF CONTENTS

|                               |  |
|-------------------------------|--|
| 1.0 PURPOSE .....             |  |
| 2.0 SCOPE .....               |  |
| 3.0 REFERENCE .....           |  |
| 4.0 RESPONSIBILITY.....       |  |
| 5.0 GENERAL REQUIREMENTS..... |  |
| 6.0 EQUIPMENT/ MATERIALS..... |  |
| 7.0 WORK SEQUENCE.....        |  |
| 8.0 SAFETY.....               |  |

## ATTACHMENTS

- Attachment 1. : Standard Maintenance procedure (SMP)
- Attachment 2. : OEM manual
- Attachment 3. : Gear box Cross Sectional Drawing
- Attachment 4. : Spare parts list
- Attachment 5. : Inspection Sheet
- Attachment 6. : Material specifications
- Attachment 7. : Data sheet
- Attachment 8. : Lube oil data.

| Rev.                                                      | Date | By | Checked                         | Approval                                                   | Revision Reasons for Issue description |                      |
|-----------------------------------------------------------|------|----|---------------------------------|------------------------------------------------------------|----------------------------------------|----------------------|
|                                                           |      |    |                                 |                                                            |                                        |                      |
| <b>SCHEM Reference:</b><br>REQ 25000942                   |      |    | <b>Plant/Unit</b><br>SPCO/SOUTH | <b>Project start date:</b><br>OCT-2022                     | <b>Rev No.</b><br>00                   | <b>Page # 2 of 6</b> |
| <b>SMH Project No:</b><br>SMH/TECH/SCHEM/MOS/2022/1006/02 |      |    |                                 | <b>Turn around/Shutdown Project</b><br>Turn around Project |                                        |                      |

- 1. Purpose:** The purpose of this Method statement is to provide guidelines for extruder gear box complete overhauling.
- 2. Scope:** Initial alignment check, Lube oil draining, Removal of clutch coupling & hubs, Decoupling the Gear box & Extruder, removal of top cover, Lifting of gear shafts, Dismantling of bearing and seals from the shafts, Cleaning of all removed parts & casings, Detailed QA/QC inspection, Assemble back the new bearings and seals, Install the gear shafts to the housing, Install back the top casing, Filling back the lube oil, Final alignment and star up support.
- 3. Reference:**
  - 3.1 Cross sectional drawing.
- 4. Responsibilities:**
  - 4.1 Project In-charge:** Ensure the safe execution of the job as per given schedule and instructions by client. Also to coordinate between client and SMH.
  - 4.2 Supervisor:** Execute the entire work as per method statement and OEM specification within the given time frame.
  - 4.3 Safety Officer:** Observe and ensure all safe work practices are followed and to guard against hazardous and unsafe working conditions.
  - 4.4 QA-QC Inspector:** Performing inspection as per inspection plan and maintaining records for quality assurance and controls.
  - 4.5 Crew members:** Follow supervisor's instructions, observe safe working practices and report unsafe conditions and acts.

| Rev.                                                      | Date | By | Checked                         | Approval                                                   | Revision Reasons for Issue description |                      |
|-----------------------------------------------------------|------|----|---------------------------------|------------------------------------------------------------|----------------------------------------|----------------------|
|                                                           |      |    |                                 |                                                            |                                        |                      |
| <b>SCHEM Reference:</b><br>REQ 25000942                   |      |    | <b>Plant/Unit</b><br>SPCO/SOUTH | <b>Project start date:</b><br>OCT-2022                     | <b>Rev No.</b><br>00                   | <b>Page # 3 of 6</b> |
| <b>SMH Project No:</b><br>SMH/TECH/SCHEM/MOS/2022/1006/02 |      |    |                                 | <b>Turn around/Shutdown Project</b><br>Turn around Project |                                        |                      |

## 5. General requirements:

- 5.1 Understanding complete SOW.
- 5.2 Work in accordance with method statement.
- 5.3 Use of valid calibrated and certified tools and equipments.
- 5.4 Follow safety rules.

## 6. Equipment/Materials

### 6.1. Equipment:

- 6.1.1. Lifting Tools and tackles, chain block pulley.
- 6.1.2. General / Millwright Tools.
- 6.1.3. Measuring Tools.
- 6.1.4. Bearing heater.
- 6.1.5. Laser alignment kit.
- 6.1.6. Fork lift / Boom truck.
- 6.1.7. Liquid N2 & Cutting set.
- 6.1.8. OEM special tools.

### 6.2. Materials:

- 6.2.1. New bearings & seals.
- 6.2.2. New gears & shafts.
- 6.2.3. Lubrication oil.
- 6.2.4. O-Rings, Gaskets.

| Rev.                                                      | Date | By | Checked                         | Approval                                                   | Revision Reasons for Issue description |                      |
|-----------------------------------------------------------|------|----|---------------------------------|------------------------------------------------------------|----------------------------------------|----------------------|
|                                                           |      |    |                                 |                                                            |                                        |                      |
| <b>SCHEM Reference:</b><br>REQ 25000942                   |      |    | <b>Plant/Unit</b><br>SPCO/SOUTH | <b>Project start date:</b><br>OCT-2022                     | <b>Rev No.</b><br>00                   | <b>Page # 4 of 6</b> |
| <b>SMH Project No:</b><br>SMH/TECH/SCHEM/MOS/2022/1006/02 |      |    |                                 | <b>Turn around/Shutdown Project</b><br>Turn around Project |                                        |                      |



## 7. Work Sequence:

- 7.1 Check the isolation, blinding, purging, tagging, lockout & tag out and scaffolding before start the job.
- 7.2 Collecting of all spare parts & piping gaskets.
- 7.3 Collecting of all special tools before start dismantling.
- 7.4 Removal of the gearbox sound proof covers.
- 7.5 Removal of related piping & instruments as necessary.
- 7.6 Removal of all coupling guards.
- 7.7 Initial alignment checks for the main & auxiliary drives.
- 7.8 Removal of the coupling spacers and hubs.
- 7.9 Draining of the lube oil from the gear box by using vacuum truck.
- 7.10 Decouple the gear box and extruder by opening the spline coupling.
- 7.11 Removal of the top casings and place on the wooden blocks.
- 7.12 Removal of all the gear shafts & planetary units from the housing.
- 7.13 Dismantling of the seals & bearings from the shafts.
- 7.14 Cleaning of all removed parts & bottom casing.
- 7.15 Detailed QA/QC inspection.
- 7.16 NDT/DPT, MPT of the shafts & gears as applicable.
- 7.17 All defected gears & shafts has to be replaced by new spare as per the QA/QC recommendation.
- 7.18 Assemble back the gears & bearings on the shafts by using bearing heater.
- 7.19 Install back the gear shafts and planetary units in to the casing.
- 7.20 Contact checking and back lash adjustment as necessary.
- 7.21 Final clearance and gear timing setting.
- 7.22 Top casing installation and torqueing by Hydro torque.
- 7.23 Install back the coupling hub and clutch coupling.
- 7.24 Refilling the lube oil to gear box.
- 7.25 Perform shaft alignment by using Laser.
- 7.26 Couple back the gear box to extruder.
- 7.27 Install back all removed piping and instruments.
- 7.28 Coupling guard installation.
- 7.29 Prepare job report mentioning all the findings and corrections.

| Rev.                                                      | Date | By | Checked                         | Approval                                                   | Revision Reasons for Issue description |                      |
|-----------------------------------------------------------|------|----|---------------------------------|------------------------------------------------------------|----------------------------------------|----------------------|
|                                                           |      |    |                                 |                                                            |                                        |                      |
| <b>SCHEM Reference:</b><br>REQ 25000942                   |      |    | <b>Plant/Unit</b><br>SPCO/SOUTH | <b>Project start date:</b><br>OCT-2022                     | <b>Rev No.</b><br>00                   | <b>Page # 5 of 6</b> |
| <b>SMH Project No:</b><br>SMH/TECH/SCHEM/MOS/2022/1006/02 |      |    |                                 | <b>Turn around/Shutdown Project</b><br>Turn around Project |                                        |                      |

## 8. Safety:

- 8.1 Do not work without permit.
- 8.2 Conduct tool box talk before starting of the job.
- 8.3 Follow all safety rules, policies and safe working conditions.
- 8.4 Report incidents immediately to the site in-charge / supervisor.

| Rev.                                                      | Date | By | Checked                         | Approval                                                   | Revision Reasons for Issue description |                      |
|-----------------------------------------------------------|------|----|---------------------------------|------------------------------------------------------------|----------------------------------------|----------------------|
|                                                           |      |    |                                 |                                                            |                                        |                      |
| <b>SCHEM Reference:</b><br>REQ 25000942                   |      |    | <b>Plant/Unit</b><br>SPCO/SOUTH | <b>Project start date:</b><br>OCT-2022                     | <b>Rev No.</b><br>00                   | <b>Page # 6 of 6</b> |
| <b>SMH Project No:</b><br>SMH/TECH/SCHEM/MOS/2022/1006/02 |      |    |                                 | <b>Turn around/Shutdown Project</b><br>Turn around Project |                                        |                      |

## METHOD STATEMENT FOR EXTRUDER OVERHAULING

**Equipment description:** .TWIN SCREW EXTRUDER

**Equipment Make:** Coperion,

**Tag numbers:** 42V80, 43V80, 44V80

| Rev.                                                      | Date | By | Checked                         | Approval                                                   | Revision Reasons for Issue description |                      |
|-----------------------------------------------------------|------|----|---------------------------------|------------------------------------------------------------|----------------------------------------|----------------------|
|                                                           |      |    |                                 |                                                            |                                        |                      |
| <b>SCHEM Reference:</b><br>REQ 25000942                   |      |    | <b>Plant/Unit</b><br>SPCO/SOUTH | <b>Project start date:</b><br>OCT-2022                     | <b>Rev No.</b><br>00                   | <b>Page # 1 of 7</b> |
| <b>SMH Project No:</b><br>SMH/TECH/SCHEM/MOS/2022/1006/01 |      |    |                                 | <b>Turn around/Shutdown Project</b><br>Turn around Project |                                        |                      |

## TABLE OF CONTENTS

|                                                   |  |
|---------------------------------------------------|--|
| 1.0 PURPOSE .....                                 |  |
| 2.0 SCOPE .....                                   |  |
| 3.0 REFERENCE .....                               |  |
| 4.0 TOOLS, SPECIAL EQUIPMENTS .....               |  |
| 5.0 SPARE PARTS, LUBRICANTS AND CONSUMABLES ..... |  |
| 6.0 WORK SEQUENCE.....                            |  |
| 7.0 SAFETY.....                                   |  |

## ATTACHMENTS

- Attachment 1. : Standard Maintenance procedure (SMP)
- Attachment 2. : OEM manual
- Attachment 3. : Extruder, Pelletizer & Gear box Cross Sectional Drawing
- Attachment 4. : Inspection Sheet
- Attachment 5. : Material specifications
- Attachment 6. : Mecos seal drawing
- Attachment 7. : Coupling drawings

| Rev.                                                      | Date | By | Checked                         | Approval                                                   | Revision Reasons for Issue description |                      |
|-----------------------------------------------------------|------|----|---------------------------------|------------------------------------------------------------|----------------------------------------|----------------------|
|                                                           |      |    |                                 |                                                            |                                        |                      |
| <b>SCHEM Reference:</b><br>REQ 25000942                   |      |    | <b>Plant/Unit</b><br>SPCO/SOUTH | <b>Project start date:</b><br>OCT-2022                     | <b>Rev No.</b><br>00                   | <b>Page # 2 of 7</b> |
| <b>SMH Project No:</b><br>SMH/TECH/SCHEM/MOS/2022/1006/01 |      |    |                                 | <b>Turn around/Shutdown Project</b><br>Turn around Project |                                        |                      |



- 1. PURPOSE:** The purpose of this procedure is to provide guidelines for Extruder overhauling includes Screw replacement, Barrel inspection and measurement, SPC overhauling and overhauling of Pelletizer.
- 2. SCOPE:** Removal of Underwater pelletizer from the trolley and Overhauling at workshop, Removal and installation of Die plate, SUV, SPC, Removal & Overhauling and replacement of screws, Install back the Pelletizer unit, Hot & cold alignment of extruder and pelletizer.
- 3. REFERENCE:**
  - 3.1 Exhibit 1-scope of work -extruder- Site Work contractor
  - 3.2 Exhibit II Schedule of Compensation- Extruder Site Work contractor
  - 3.3 Exhibit III - Safety and Security Instruction (Rev.08 26.09.21) - ALL PelletizerDrive\_20171205145736.031\_X
  - 3.4 Exhibit IV - General Terms and Conditions (Short Form)
- 4. TOOLS, SPECIAL EQUIPMENTS**
  - 4.1 General / Millwright Tools.
  - 4.2 Screw removal & Installation special tools.
  - 4.3 Screw assembly & disassembly special tools.
  - 4.4 Pelletizer special tools.
  - 4.5 Lifting tools and tackles.
  - 4.6 Bearing heater.
  - 4.7 Coupling puller.
  - 4.8 Measurement tools.
  - 4.9 Fork lift for transportation.
- 5. SPARE PARTS, LUBRICANTS AND CONSUMABLES**
  - 5.1 New screw elements
  - 5.2 New screw seal
  - 5.3 Pelletizer spare parts.
  - 5.4 Gear box spare parts.
  - 5.5 Lubricants as required.
  - 5.6 "O" rings and gaskets.
  - 5.7 Consumables.
  - 5.8 SPC spare parts

| Rev.                                                      | Date | By | Checked                         | Approval                                                   | Revision Reasons for Issue description |                      |
|-----------------------------------------------------------|------|----|---------------------------------|------------------------------------------------------------|----------------------------------------|----------------------|
|                                                           |      |    |                                 |                                                            |                                        |                      |
| <b>SCHEM Reference:</b><br>REQ 25000942                   |      |    | <b>Plant/Unit</b><br>SPCO/SOUTH | <b>Project start date:</b><br>OCT-2022                     | <b>Rev No.</b><br>00                   | <b>Page # 3 of 7</b> |
| <b>SMH Project No:</b><br>SMH/TECH/SCHEM/MOS/2022/1006/01 |      |    |                                 | <b>Turn around/Shutdown Project</b><br>Turn around Project |                                        |                      |

## 6. WORK SEQUENCE:

### PREPARATION, ISOLATION & PERMITTING

- 6.1 Obtain work permit.
- 6.2 Check preparation and isolation which includes tagging, blinds, break points, scaffolding.
- 6.3 Collecting of special tools, consumables and spares.
- 6.4 Removal of insulation from all the required places.
- 6.5 Draining of lube oil from the tank by vacuum truck.

### REMOVAL & INSTALLATION OF PELLETIZER

- 6.6 All lifting tools & tackles must having valid TPI.
- 6.7 Check and record initial alignment of the equipment
- 6.8 Qualified riggers & Equip.operators only to perform lifting activities.
- 6.9 Barricade area before the job.
- 6.10 Remove all the piping, Electrical & Instrument connection from the pelletizer.
- 6.11 Attach the lifting accessories to the lifting points considering the weight & other parameters.
- 6.12 Lift the unit includes the carriage from the rail by using chain block.
- 6.13 Lift & move the load slowly / carefully by mono rail & chain block till the travel limit.
- 6.14 Bring the 40 feet Flatbed trailer in to the building.
- 6.15 Lower the load on to the Flatbed and secure by ratchet strap / rope.
- 6.16 De attach the mono rail & chain block from the load.
- 6.17 Transport the unit to workshop for overhauling.
- 6.18 Handover the motor to electrical for PM.

Note: Reinstallation of the pelletizer unit is exactly opposite to the disassembly sequence.

### REMOVAL AND INSTALLATION OF DIE PLATE, SUV & SPC

- 6.19 Arranging of all lifting tools & general tools prior to the job
- 6.20 Check and make sure the mono rail test documents & functionality.
- 6.21 All lifting tools & tackles must having valid TPI.
- 6.22 Qualified riggers & Equip.operators only to perform lifting activities.
- 6.23 Barricade area before the job.

| Rev.                                                      | Date | By | Checked                         | Approval                                                   | Revision Reasons for Issue description |                      |
|-----------------------------------------------------------|------|----|---------------------------------|------------------------------------------------------------|----------------------------------------|----------------------|
|                                                           |      |    |                                 |                                                            |                                        |                      |
| <b>SCHEM Reference:</b><br>REQ 25000942                   |      |    | <b>Plant/Unit</b><br>SPCO/SOUTH | <b>Project start date:</b><br>OCT-2022                     | <b>Rev No.</b><br>00                   | <b>Page # 4 of 7</b> |
| <b>SMH Project No:</b><br>SMH/TECH/SCHEM/MOS/2022/1006/01 |      |    |                                 | <b>Turn around/Shutdown Project</b><br>Turn around Project |                                        |                      |

- 6.24 Remove all the piping, Electrical & Instrument connection from the Die plate, screen pack changer & SUV assembly.
- 6.25 Attach the lifting accessories to the lifting points considering the weight & other parameters
- 6.26 Slightly load the Die plate by wire ropes and detach the die plate from the SPC.
- 6.27 Lift and transfer the die plate to flatbed trailer.
- 6.28 Slightly load the SPC assembly by mono rail and chain block.
- 6.29 Lift the SPC by mono rail and chain blocks
- 6.30 Lift & move the load slowly / carefully by monorail till the monorail travel limit.
- 6.31 Bring the 40 feet Flatbed trailer in to the building.
- 6.32 Transfer the equipment's to designated yard for hydro jetting

Note: Reinstallation of the SUV.SPC & Die plate unit is exactly opposite to the disassembly sequence.

### SCREW REMOVAL AND INSTALLATION

- 6.33 Arranging of all lifting tools & general tools prior to the job
- 6.34 Check and make sure the mono rail test documents & functionality.
- 6.35 All lifting tools & tackles must having valid TPI.
- 6.36 Qualified riggers & Equip.operators only to perform lifting activities.
- 6.37 Barricade area before the job.
- 6.38 Decouple the screws from the output shaft.
- 6.39 Remove / dismantle the powder sealing system from the screws.
- 6.40 Mount the pullout device on the screw shafts with a rope to mono rail / chain block.
- 6.41 Pull out the screws carefully from the barrel till the first clamping device can be installed.
- 6.42 Pull the screws furthermore, so that the second clamping device can be installed.
- 6.43 Attach the second mono rail to the clamping device.
- 6.44 Pullout screws completely from the barrel & move the load slowly / carefully by mono rail and chain block till the rail travel limit.
- 6.45 Bring the 40 feet Flatbed trailer in to the building.
- 6.46 Lower the load on to the Flatbed and secure by ratchet strap / rope.
- 6.47 De attach the load from the mono rail.
- 6.48 Transport the screw to hydro jetting area.
- 6.49 Setup the 80 Ton crane.
- 6.50 Barricade the lifting area.
- 6.51 Lift the screws from the truck and place on the wooden blocks / temporary stand.

| Rev.                                                      | Date | By | Checked                         | Approval                                                   | Revision Reasons for Issue description |                      |
|-----------------------------------------------------------|------|----|---------------------------------|------------------------------------------------------------|----------------------------------------|----------------------|
|                                                           |      |    |                                 |                                                            |                                        |                      |
| <b>SCHEM Reference:</b><br>REQ 25000942                   |      |    | <b>Plant/Unit</b><br>SPCO/SOUTH | <b>Project start date:</b><br>OCT-2022                     | <b>Rev No.</b><br>00                   | <b>Page # 5 of 7</b> |
| <b>SMH Project No:</b><br>SMH/TECH/SCHEM/MOS/2022/1006/01 |      |    |                                 | <b>Turn around/Shutdown Project</b><br>Turn around Project |                                        |                      |

6.52 Remove all the lifting tackles from the load and barricade the area.

Note: Reinstallation of the screws is exactly opposite to the disassembly sequence.

### PELLETIZER OVERHAULING

- 6.53 Remove the knife assembly from the cutter shaft.
- 6.54 Check and record initial shaft alignment.
- 6.55 Decouple the equipment from the motor.
- 6.56 Check and record the initial float and runout.
- 6.57 Remove the coupling hub by bearing puller.
- 6.58 Remove the mechanical seal from the shaft.
- 6.59 Dismantle the hood from the unit.
- 6.60 Pull out the cutter shaft from the housing.
- 6.61 Dismantle the bearings from the shaft.
- 6.62 Cleaning and inspection of all the parts.
- 6.63 Install new bearings on the shaft by bearing heater.
- 6.64 Assemble the rotor to the housing.
- 6.65 Install the mechanical seal and assemble the hood with rotor assembly.
- 6.66 Checking and adjusting the final float and runout.
- 6.67 Install back the coupling hub by induction heater.
- 6.68 Couple the pelletizer with motor and perform shaft alignment.

### SPC OVERHAULING

- 6.69 SPC unit has to install back to position after hydro jetting and external cleaning
- 6.70 Install back all steam, hot oil & hydraulic connections.
- 6.71 Connect back all electrical and instrument wiring.
- 6.72 Heat up the unit at operating temperature.
- 6.73 Operate the Top cylinder to OPEN position and the breaker plates from position by special tools.
- 6.74 Disconnect the cylinder from hydraulic piston.
- 6.75 Remove the guards and positioning clamps of both piston.
- 6.76 Retract the hydraulic piston from the cylinder.
- 6.77 Place suitable extension like wooden blocks between cylinder & hydraulic piston.
- 6.78 Prepare suitable lifting arrangement (Use wire rope) to hold the cylinder.
- 6.79 Operate the hydraulic piston forward direction till the cylinder came out from the housing.
- 6.80 Lift and remove cylinder and place on wooden blocks.

| Rev.                                                      | Date | By | Checked                         | Approval                                                   | Revision Reasons for Issue description |                      |
|-----------------------------------------------------------|------|----|---------------------------------|------------------------------------------------------------|----------------------------------------|----------------------|
|                                                           |      |    |                                 |                                                            |                                        |                      |
| <b>SCHEM Reference:</b><br>REQ 25000942                   |      |    | <b>Plant/Unit</b><br>SPCO/SOUTH | <b>Project start date:</b><br>OCT-2022                     | <b>Rev No.</b><br>00                   | <b>Page # 6 of 7</b> |
| <b>SMH Project No:</b><br>SMH/TECH/SCHEM/MOS/2022/1006/01 |      |    |                                 | <b>Turn around/Shutdown Project</b><br>Turn around Project |                                        |                      |



- 6.81 Repeat the same procedure for bottom cylinder.
- 6.82 Cleaning of cylinder and housing by buffing.
- 6.83 Remove and replace the sealing as necessary.
- 6.84 Inspection of all the parts after cleaning.
- 6.85 Lift and install the bottom cylinder to the housing.
- 6.86 Connect back the positioning clamp.
- 6.87 Reconnect the cylinder with hydraulic piston.
- 6.88 Operate the piston at CLOSE position.
- 6.89 Repeat the same procedure for Top cylinder.
- 6.90 Install back the safety guards and instruments.
- 6.91 Connect back steam piping, hot oil and cooling water piping.
- 6.92 Housekeeping and close work permit.
- 6.93 Prepare job history card.

## 7. SAFETY:

- 7.1 Do not work without permit.
- 7.2 Conduct tool box talk before starting of the job.
- 7.3 Follow all safety rules, policies and safe working conditions.
- 7.4 Report incidents immediately to the site in-charge / supervisor.

-----END-----

| Rev.                                                      | Date | By | Checked                         | Approval                                                   | Revision Reasons for Issue description |                      |
|-----------------------------------------------------------|------|----|---------------------------------|------------------------------------------------------------|----------------------------------------|----------------------|
|                                                           |      |    |                                 |                                                            |                                        |                      |
| <b>SCHEM Reference:</b><br>REQ 25000942                   |      |    | <b>Plant/Unit</b><br>SPCO/SOUTH | <b>Project start date:</b><br>OCT-2022                     | <b>Rev No.</b><br>00                   | <b>Page # 7 of 7</b> |
| <b>SMH Project No:</b><br>SMH/TECH/SCHEM/MOS/2022/1006/01 |      |    |                                 | <b>Turn around/Shutdown Project</b><br>Turn around Project |                                        |                      |

## METHOD STATEMENT FOR PELLET DRYER

**Equipment description:** .CENTRIFUGAL DRYER

**Equipment Make:** CARTER DAY

**Tag numbers:** 42X84/85, 43X84/85, 44X84

| Rev.                                                      | Date | By | Checked                         | Approval                                                   | Revision Reasons for Issue description |                      |
|-----------------------------------------------------------|------|----|---------------------------------|------------------------------------------------------------|----------------------------------------|----------------------|
|                                                           |      |    |                                 |                                                            |                                        |                      |
| <b>SCHEM Reference:</b><br>REQ 25000942                   |      |    | <b>Plant/Unit</b><br>SPCO/SOUTH | <b>Project start date:</b><br>OCT-2022                     | <b>Rev No.</b><br>00                   | <b>Page # 1 of 4</b> |
| <b>SMH Project No:</b><br>SMH/TECH/SCHEM/MOS/2022/1006/03 |      |    |                                 | <b>Turn around/Shutdown Project</b><br>Turn around Project |                                        |                      |

## TABLE OF CONTENTS

|                                                   |  |
|---------------------------------------------------|--|
| 1.0 PURPOSE .....                                 |  |
| 2.0 SCOPE .....                                   |  |
| 3.0 REFERENCE .....                               |  |
| 4.0 TOOLS, SPECIAL EQUIPMENTS .....               |  |
| 5.0 SPARE PARTS, LUBRICANTS AND CONSUMABLES ..... |  |
| 6.0 WORK SEQUENCE.....                            |  |
| 7.0 SAFETY.....                                   |  |

## ATTACHMENTS

- Attachment 1. : Standard Maintenance procedure (SMP)
- Attachment 2. : OEM manual
- Attachment 3. : Pellet Dryer cross sectional drawing
- Attachment 4. : Inspection Sheet
- Attachment 5. : Material specifications
- Attachment 6. : Alignment data.

| Rev.                                                      | Date | By | Checked                         | Approval                                                   | Revision Reasons for Issue description |                      |
|-----------------------------------------------------------|------|----|---------------------------------|------------------------------------------------------------|----------------------------------------|----------------------|
|                                                           |      |    |                                 |                                                            |                                        |                      |
| <b>SCHEM Reference:</b><br>REQ 25000942                   |      |    | <b>Plant/Unit</b><br>SPCO/SOUTH | <b>Project start date:</b><br>OCT-2022                     | <b>Rev No.</b><br>00                   | <b>Page # 2 of 4</b> |
| <b>SMH Project No:</b><br>SMH/TECH/SCHEM/MOS/2022/1006/03 |      |    |                                 | <b>Turn around/Shutdown Project</b><br>Turn around Project |                                        |                      |

1. **PURPOSE:** The purpose of this procedure is to provide guidelines for servicing of centrifugal Pellet Dryer.
2. **SCOPE:** Complete servicing of the dryer including the top & bottom bearing replacement, V belt changing , rotor screen & sieve entry replacement and to conduct housekeeping of the area.
3. **REFERENCE:**
  - 3.1 Exhibit 1-scope of work -extruder- Site Work contractor
  - 3.2 Exhibit II Schedule of Compensation- Extruder Site Work contractor
  - 3.3 Exhibit III - Safety and Security Instruction (Rev.08 26.09.21) - ALL PelletizerDrive\_20171205145736.031\_X
  - 3.4 Exhibit IV - General Terms and Conditions (Short Form)

#### 4. TOOLS, SPECIAL EQUIPMENTS

- 4.1 General / Millwright Tools.
- 4.2 Pelletizer special tools.
- 4.3 Lifting tools and tackles.
- 4.4 Bearing heater.
- 4.5 Coupling puller.
- 4.6 Measurement tools.
- 4.7 Fork lift for transportation.

#### 5. SPARE PARTS, LUBRICANTS AND CONSUMABLES

- 5.1 New screens
- 5.2 New V belts.
- 5.3 New bearings and seals.
- 5.4 Lubricants as required.
- 5.5 "O" rings and gaskets.
- 5.6 Consumables.

| Rev.                                                      | Date | By | Checked                         | Approval                                                   | Revision Reasons for Issue description |                      |
|-----------------------------------------------------------|------|----|---------------------------------|------------------------------------------------------------|----------------------------------------|----------------------|
|                                                           |      |    |                                 |                                                            |                                        |                      |
| <b>SCHEM Reference:</b><br>REQ 25000942                   |      |    | <b>Plant/Unit</b><br>SPCO/SOUTH | <b>Project start date:</b><br>OCT-2022                     | <b>Rev No.</b><br>00                   | <b>Page # 3 of 4</b> |
| <b>SMH Project No:</b><br>SMH/TECH/SCHEM/MOS/2022/1006/03 |      |    |                                 | <b>Turn around/Shutdown Project</b><br>Turn around Project |                                        |                      |



## 6. WORK SEQUENCE:

### PREPARATION, ISOLATION & PERMITTING

- 6.1 Obtain work permit.
- 6.2 Check preparation and isolation which includes tagging, blinds, break points, scaffolding.
- 6.3 Collecting of special tools, consumables and spares.
- 6.4 Removal of insulation from all the required places.
- 6.5 Obtain confined space entry if required.

### INSPECTION & SERVICING

- 6.6 Remove the drive belts to disconnect the drive motor.
- 6.7 Dismantling of top bottom bearings
- 6.8 Removal of rotor screen & sieve entry.
- 6.9 Cleaning and inspection of removed parts.
- 6.10 Replace the top & bottom bearings by new.
- 6.11 Replace the rotor screen & sieve entry by new.
- 6.12 Inspection & adjusting clearance of lifters.
- 6.13 Inspection & replacement of centering rings.
- 6.14 Tightness check & inspection of bolt joint and screw joint.
- 6.15 Perform insitu rotor balancing if necessary.
- 6.16 Inspection of agglomerate diverter valve as necessary.
- 6.17 Install new V belt, tensioning and alignment.
- 6.18 Install new door gaskets.
- 6.19 Replace suction filters.
- 6.20 Replace greasing tubes & nipple.
- 6.21 Final inspection and box up.
- 6.22 Reinstall all associated piping & instruments.
- 6.23 De blinding & housekeeping.
- 6.24 Close work permit

## 7. SAFETY:

- 7.1 Do not work without permit.
- 7.2 Conduct tool box talk before starting of the job.
- 7.3 Follow all safety rules, policies and safe working conditions.
- 7.4 Report incidents immediately to the site in-charge / supervisor.

-----END-----

| Rev.                                                      | Date | By | Checked                                | Approval                                                   | Revision Reasons for Issue description |                      |
|-----------------------------------------------------------|------|----|----------------------------------------|------------------------------------------------------------|----------------------------------------|----------------------|
|                                                           |      |    |                                        |                                                            |                                        |                      |
| <b>SCHEM Reference:</b><br>REQ 25000942                   |      |    | <b>Plant/Unit</b><br><b>SPCO/SOUTH</b> | <b>Project start date:</b><br>OCT-2022                     | <b>Rev No.</b><br><b>00</b>            | <b>Page # 4 of 4</b> |
| <b>SMH Project No:</b><br>SMH/TECH/SCHEM/MOS/2022/1006/03 |      |    |                                        | <b>Turn around/Shutdown Project</b><br>Turn around Project |                                        |                      |

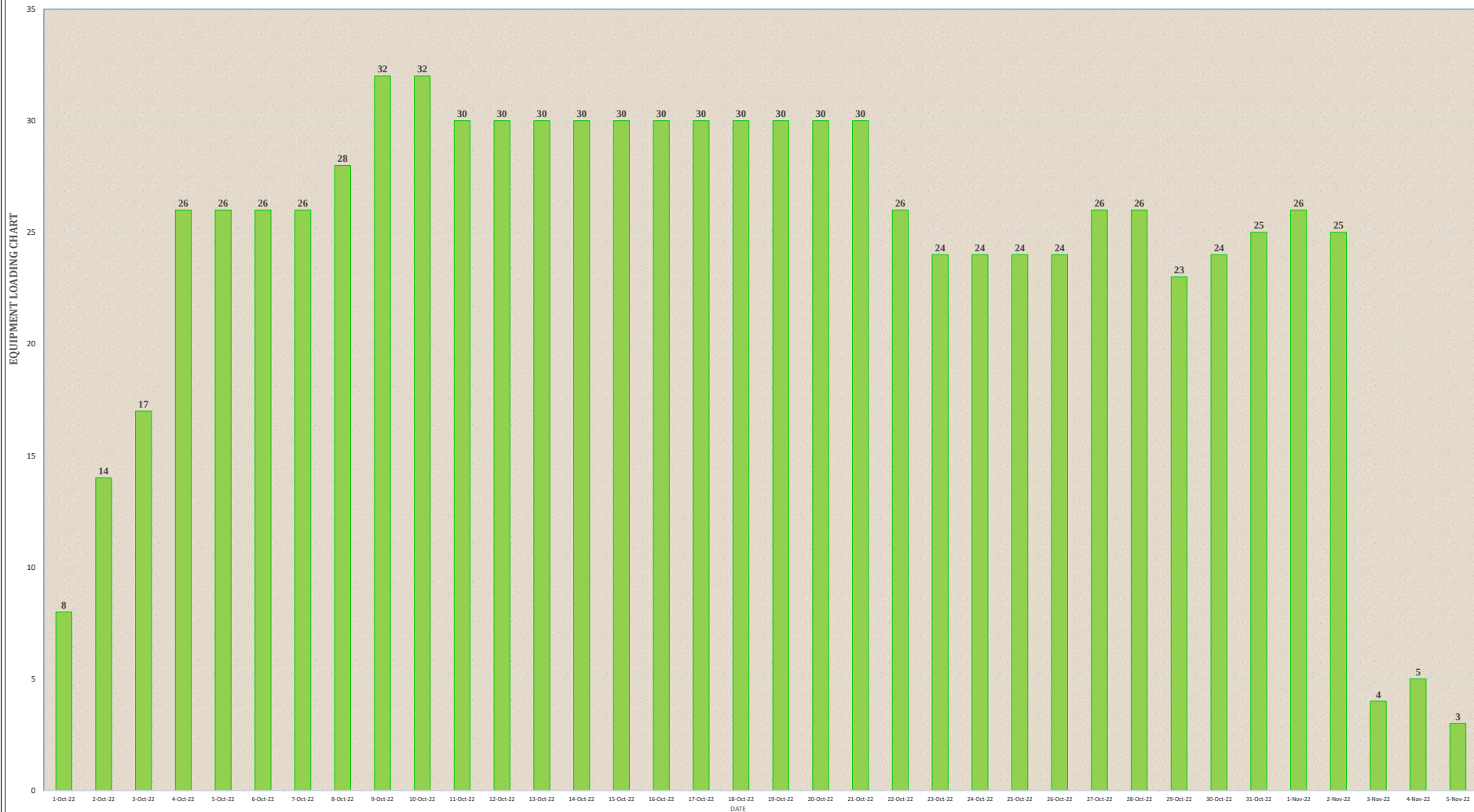


REQ 25000942 S-CHEM SITE EXECUTION SERVICE /INSPECTION AND OVERHAUL ON EXTRUDER MACHINES (SPCO TA 2022)

Equipment Loading Chart

| Day No  | 1               | 2        | 3        | 4        | 5        | 6        | 7        | 8        | 9        | 10        | 11        | 12        | 13        | 14        | 15        | 16        | 17        | 18        | 19        | 20        | 21        | 22        | 23        | 24        | 25        | 26        | 27        | 28        | 29        | 30        | 31        | 32       | 33       | 34       | 35       | 36       |               |  |  |
|---------|-----------------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|----------|----------|----------|----------|---------------|--|--|
| PHASE   | DECOMMISSIONING |          |          | SHUTDOWN |          |          |          |          |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |          |          |          |          |          | COMMISSIONING |  |  |
| Date    | 1-Oct-22        | 2-Oct-22 | 3-Oct-22 | 4-Oct-22 | 5-Oct-22 | 6-Oct-22 | 7-Oct-22 | 8-Oct-22 | 9-Oct-22 | 10-Oct-22 | 11-Oct-22 | 12-Oct-22 | 13-Oct-22 | 14-Oct-22 | 15-Oct-22 | 16-Oct-22 | 17-Oct-22 | 18-Oct-22 | 19-Oct-22 | 20-Oct-22 | 21-Oct-22 | 22-Oct-22 | 23-Oct-22 | 24-Oct-22 | 25-Oct-22 | 26-Oct-22 | 27-Oct-22 | 28-Oct-22 | 29-Oct-22 | 30-Oct-22 | 31-Oct-22 | 1-Nov-22 | 2-Nov-22 | 3-Nov-22 | 4-Nov-22 | 5-Nov-22 |               |  |  |
| Planned | 8               | 14       | 17       | 26       | 26       | 26       | 26       | 28       | 32       | 32        | 30        | 30        | 30        | 30        | 30        | 30        | 30        | 30        | 30        | 30        | 30        | 26        | 24        | 24        | 24        | 24        | 26        | 26        | 23        | 24        | 25        | 26       | 25       | 4        | 5        | 3        |               |  |  |

EQUIPMENT LOADING CHART



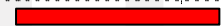


REQ 25000942 S-CHEM SITE EXECUTION SERVICE ,INSPECTION AND OVERHAUL ON EXTRUDER MACHINES (SPCO TA 2022)

Manpower Histogram

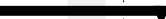
| Day No  | 1               | 2        | 3        | 4        | 5        | 6        | 7        | 8        | 9        | 10        | 11        | 12        | 13        | 14        | 15        | 16        | 17        | 18        | 19        | 20        | 21        | 22        | 23        | 24        | 25        | 26        | 27        | 28        | 29        | 30        | 31        | 32       | 33       | 34       | 35            | 36       |    |  |  |
|---------|-----------------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|----------|----------|---------------|----------|----|--|--|
| PHASE   | DECOMMISSIONING |          |          |          |          |          |          |          |          |           |           |           |           |           |           |           |           | SHUTDOWN  |           |           |           |           |           |           |           |           |           |           |           |           |           |          |          |          | COMMISSIONING |          |    |  |  |
| Date    | 1-Oct-22        | 2-Oct-22 | 3-Oct-22 | 4-Oct-22 | 5-Oct-22 | 6-Oct-22 | 7-Oct-22 | 8-Oct-22 | 9-Oct-22 | 10-Oct-22 | 11-Oct-22 | 12-Oct-22 | 13-Oct-22 | 14-Oct-22 | 15-Oct-22 | 16-Oct-22 | 17-Oct-22 | 18-Oct-22 | 19-Oct-22 | 20-Oct-22 | 21-Oct-22 | 22-Oct-22 | 23-Oct-22 | 24-Oct-22 | 25-Oct-22 | 26-Oct-22 | 27-Oct-22 | 28-Oct-22 | 29-Oct-22 | 30-Oct-22 | 31-Oct-22 | 1-Nov-22 | 2-Nov-22 | 3-Nov-22 | 4-Nov-22      | 5-Nov-22 |    |  |  |
| Planned | 38              | 50       | 55       | 126      | 126      | 126      | 126      | 126      | 126      | 126       | 126       | 126       | 126       | 126       | 126       | 126       | 126       | 126       | 126       | 126       | 126       | 126       | 126       | 126       | 126       | 126       | 126       | 126       | 126       | 127       | 127       | 127      | 127      | 127      | 42            | 40       | 39 |  |  |



| REQ# 25000942                                                                                                                             |                                | SITE EXECUTION SERVICE ,INSPECTION AND OVERHAUL ON EXTRUDER MACHINES (SPCO TA 2022) |  |  |                                                                                                               |                 |                 |                                                                                                                                |   |                                                                                                          |   |        |   |                 |   |          |   |         |   |          |   |   |   |   |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------|--|--|---------------------------------------------------------------------------------------------------------------|-----------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------------|---|--------|---|-----------------|---|----------|---|---------|---|----------|---|---|---|---|
| Activity ID                                                                                                                               |                                | Activity Name                                                                       |  |  | Original Duration                                                                                             | Start           | Finish          | Oct 02                                                                                                                         |   | Oct 09                                                                                                   |   | Oct 16 |   | Oct 23          |   | Oct 30   |   | Nov 06  |   |          |   |   |   |   |
|                                                                                                                                           |                                |                                                                                     |  |  |                                                                                                               |                 |                 | T                                                                                                                              | T | F                                                                                                        | S | S      | T | T               | F | S        | S | T       | T | F        | S | S | T | T |
| <div> S-CHEM- EXTRUDER - TA -2022</div>                  |                                |                                                                                     |  |  | 792h                                                                                                          | 04-Oct-22 00:00 | 06-Nov-22 00:00 | <div></div>                                 |   |                                                                                                          |   |        |   |                 |   |          |   |         |   |          |   |   |   |   |
| <div> MILE STONES</div>                                  |                                |                                                                                     |  |  | 792h                                                                                                          | 04-Oct-22 00:00 | 06-Nov-22 00:00 | <div></div>                                 |   |                                                                                                          |   |        |   |                 |   |          |   |         |   |          |   |   |   |   |
| <div> MSE 10</div>                                       | Shutdown Start                 |                                                                                     |  |  | 0h                                                                                                            | 04-Oct-22 00:00 |                 | <div> Shutdown Start, 04-Oct-22 00:00</div> |   |                                                                                                          |   |        |   |                 |   |          |   |         |   |          |   |   |   |   |
| <div> MSE 30</div>                                       | Shutdown Finish                |                                                                                     |  |  | 0h                                                                                                            |                 | 03-Nov-22 00:00 | <div> Shutdown</div>                        |   |                                                                                                          |   |        |   |                 |   |          |   |         |   |          |   |   |   |   |
| <div> MSE20</div>                                        | Commissioning/Startup          |                                                                                     |  |  | 72h                                                                                                           | 03-Nov-22 00:00 | 06-Nov-22 00:00 | <div></div>                                 |   |                                                                                                          |   |        |   |                 |   |          |   |         |   |          |   |   |   |   |
| <div> OVERHAUL ON EXTRUDER MACHINES (SPCO TA 2022)</div> |                                |                                                                                     |  |  | 792h                                                                                                          | 04-Oct-22 00:00 | 06-Nov-22 00:00 | <div></div>                                 |   |                                                                                                          |   |        |   |                 |   |          |   |         |   |          |   |   |   |   |
| <div> MAINTENANCE ACTIVITIES</div>                       |                                |                                                                                     |  |  | 720h                                                                                                          | 04-Oct-22 00:00 | 03-Nov-22 00:00 | <div></div>                                 |   |                                                                                                          |   |        |   |                 |   |          |   |         |   |          |   |   |   |   |
| <div> UNIT 42</div>                                      |                                |                                                                                     |  |  | 720h                                                                                                          | 04-Oct-22 00:00 | 03-Nov-22 00:00 | <div></div>                                 |   |                                                                                                          |   |        |   |                 |   |          |   |         |   |          |   |   |   |   |
| <div> EXTRUDER GEAR BOX</div>                            |                                |                                                                                     |  |  | 720h                                                                                                          | 04-Oct-22 00:00 | 03-Nov-22 00:00 | <div></div>                                 |   |                                                                                                          |   |        |   |                 |   |          |   |         |   |          |   |   |   |   |
| <div> DISMANTALING</div>                                 |                                |                                                                                     |  |  | 260h                                                                                                          | 04-Oct-22 00:00 | 14-Oct-22 20:00 | <div></div>                                 |   |                                                                                                          |   |        |   |                 |   |          |   |         |   |          |   |   |   |   |
| <div> U-42-EXE-GB-10</div>                               | Dismantling of Gear Box        |                                                                                     |  |  | 260h                                                                                                          | 04-Oct-22 00:00 | 14-Oct-22 20:00 | <div></div>                                 |   |                                                                                                          |   |        |   |                 |   |          |   |         |   |          |   |   |   |   |
| <div> CLEANING &amp; INSPECTION</div>                   |                                |                                                                                     |  |  | 200h                                                                                                          | 14-Oct-22 20:00 | 23-Oct-22 04:00 | <div></div>                                |   |                                                                                                          |   |        |   |                 |   |          |   |         |   |          |   |   |   |   |
| <div> U-42-EXE-GB-20</div>                             | Cleaning and Inspection        |                                                                                     |  |  | 200h                                                                                                          | 14-Oct-22 20:00 | 23-Oct-22 04:00 | <div></div>                               |   |                                                                                                          |   |        |   |                 |   |          |   |         |   |          |   |   |   |   |
| <div> ASSEMBLING</div>                                 |                                |                                                                                     |  |  | 260h                                                                                                          | 23-Oct-22 04:00 | 03-Nov-22 00:00 | <div></div>                               |   |                                                                                                          |   |        |   |                 |   |          |   |         |   |          |   |   |   |   |
| <div> U-42-EXE-GB-30</div>                             | Reassembling                   |                                                                                     |  |  | 260h                                                                                                          | 23-Oct-22 04:00 | 03-Nov-22 00:00 | <div></div>                               |   |                                                                                                          |   |        |   |                 |   |          |   |         |   |          |   |   |   |   |
| <div> PROCESS SECTION</div>                            |                                |                                                                                     |  |  | 720h                                                                                                          | 04-Oct-22 00:00 | 03-Nov-22 00:00 | <div></div>                               |   |                                                                                                          |   |        |   |                 |   |          |   |         |   |          |   |   |   |   |
| <div> DISMANTALING</div>                               |                                |                                                                                     |  |  | 260h                                                                                                          | 04-Oct-22 00:00 | 14-Oct-22 20:00 | <div></div>                               |   |                                                                                                          |   |        |   |                 |   |          |   |         |   |          |   |   |   |   |
| <div> U-42-EX-PS-10</div>                              | Dismantling of Process Section |                                                                                     |  |  | 260h                                                                                                          | 04-Oct-22 00:00 | 14-Oct-22 20:00 | <div></div>                               |   |                                                                                                          |   |        |   |                 |   |          |   |         |   |          |   |   |   |   |
| <div> CLEANING &amp; INSPECTION</div>                  |                                |                                                                                     |  |  | 200h                                                                                                          | 14-Oct-22 20:00 | 23-Oct-22 04:00 | <div></div>                               |   |                                                                                                          |   |        |   |                 |   |          |   |         |   |          |   |   |   |   |
| <div> U-42-EX-PS-20</div>                              | Cleaning and Inspection        |                                                                                     |  |  | 200h                                                                                                          | 14-Oct-22 20:00 | 23-Oct-22 04:00 | <div></div>                               |   |                                                                                                          |   |        |   |                 |   |          |   |         |   |          |   |   |   |   |
| <div> ASSEMBLING</div>                                 |                                |                                                                                     |  |  | 260h                                                                                                          | 23-Oct-22 04:00 | 03-Nov-22 00:00 | <div></div>                               |   |                                                                                                          |   |        |   |                 |   |          |   |         |   |          |   |   |   |   |
| <div> U-42-EX-PS-30</div>                              | Reassembling                   |                                                                                     |  |  | 260h                                                                                                          | 23-Oct-22 04:00 | 03-Nov-22 00:00 | <div></div>                               |   |                                                                                                          |   |        |   |                 |   |          |   |         |   |          |   |   |   |   |
| <div> PELLET DYER</div>                                |                                |                                                                                     |  |  | 720h                                                                                                          | 04-Oct-22 00:00 | 03-Nov-22 00:00 | <div></div>                               |   |                                                                                                          |   |        |   |                 |   |          |   |         |   |          |   |   |   |   |
| <div> DISMANTALING</div>                               |                                |                                                                                     |  |  | 260h                                                                                                          | 04-Oct-22 00:00 | 14-Oct-22 20:00 | <div></div>                               |   |                                                                                                          |   |        |   |                 |   |          |   |         |   |          |   |   |   |   |
|                                                                                                                                           |                                |                                                                                     |  |  |                                                                                                               |                 |                 |                                                                                                                                |   |                                                                                                          |   |        |   |                 |   |          |   |         |   |          |   |   |   |   |
| <div> Actual Work</div>                                |                                |                                                                                     |  |  | <div> Summary</div>        |                 |                 |                                                                                                                                |   | <div> Milestone</div> |   |        |   |                 |   |          |   |         |   |          |   |   |   |   |
| <div> Critical Remaining Work</div>                    |                                |                                                                                     |  |  | <div> Remaining Work</div> |                 |                 |                                                                                                                                |   |                                                                                                          |   |        |   |                 |   |          |   |         |   |          |   |   |   |   |
| <div><i>BIDDING SCHEDULE</i></div>                                                                                                        |                                |                                                                                     |  |  |                                                                                                               |                 |                 |                                                                                                                                |   | Page 1 of 4                                                                                              |   |        |   | Date            |   | Revision |   | Checked |   | Approved |   |   |   |   |
|                                                                                                                                           |                                |                                                                                     |  |  |                                                                                                               |                 |                 |                                                                                                                                |   |                                                                                                          |   |        |   | 04-Oct-22 00:00 |   |          |   |         |   |          |   |   |   |   |

|               |                                                                                     |
|---------------|-------------------------------------------------------------------------------------|
| REQ# 25000942 | SITE EXECUTION SERVICE ,INSPECTION AND OVERHAUL ON EXTRUDER MACHINES (SPCO TA 2022) |
|---------------|-------------------------------------------------------------------------------------|

|               |                                                                                     |
|---------------|-------------------------------------------------------------------------------------|
| REQ# 25000942 | SITE EXECUTION SERVICE ,INSPECTION AND OVERHAUL ON EXTRUDER MACHINES (SPCO TA 2022) |
|---------------|-------------------------------------------------------------------------------------|

| Activity ID                                                                                               | Activity Name                                                                                             | Original Duration              | Start           | Finish          | Oct 02                                                                                | Oct 09                                                                                | Oct 16 | Oct 23 | Oct 30 | Nov 06 |   |   |   |   |   |   |   |   |  |  |
|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|--------------------------------|-----------------|-----------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------|--------|--------|--------|---|---|---|---|---|---|---|---|--|--|
|                                                                                                           |                                                                                                           |                                |                 |                 | T                                                                                     | T                                                                                     | F      | S      | T      | T      | F | S | T | T | F | S | T | T |  |  |
| UNIT 43                                                                                                   |  U-42-EXE-PD-10          | Dismantling of Pellet Dyer     | 260h            | 04-Oct-22 00:00 | 14-Oct-22 20:00                                                                       |    |        |        |        |        |   |   |   |   |   |   |   |   |  |  |
|                                                                                                           |  CLEANING & INSPECTION   |                                | 200h            | 14-Oct-22 20:00 | 23-Oct-22 04:00                                                                       |    |        |        |        |        |   |   |   |   |   |   |   |   |  |  |
|                                                                                                           |  U-42-EXE-PD-20          | Cleaning and Inspection        | 200h            | 14-Oct-22 20:00 | 23-Oct-22 04:00                                                                       |    |        |        |        |        |   |   |   |   |   |   |   |   |  |  |
|                                                                                                           |  ASSEMBLING              |                                | 260h            | 23-Oct-22 04:00 | 03-Nov-22 00:00                                                                       |    |        |        |        |        |   |   |   |   |   |   |   |   |  |  |
|                                                                                                           |  U-42-EXE-PD-30          | Reassembling                   | 260h            | 23-Oct-22 04:00 | 03-Nov-22 00:00                                                                       |    |        |        |        |        |   |   |   |   |   |   |   |   |  |  |
|                                                                                                           |  UNIT 43                 |                                | 720h            | 04-Oct-22 00:00 | 03-Nov-22 00:00                                                                       |    |        |        |        |        |   |   |   |   |   |   |   |   |  |  |
|                                                                                                           |  EXTRUDER GEAR BOX       |                                | 720h            | 04-Oct-22 00:00 | 03-Nov-22 00:00                                                                       |    |        |        |        |        |   |   |   |   |   |   |   |   |  |  |
|                                                                                                           |  DISMANTLING             |                                | 260h            | 04-Oct-22 00:00 | 14-Oct-22 20:00                                                                       |    |        |        |        |        |   |   |   |   |   |   |   |   |  |  |
|                                                                                                           |  U-43-EXE-GB-10          | Dismantling of Gear Box        | 260h            | 04-Oct-22 00:00 | 14-Oct-22 20:00                                                                       |    |        |        |        |        |   |   |   |   |   |   |   |   |  |  |
|                                                                                                           |  CLEANING & INSPECTION   |                                | 200h            | 14-Oct-22 20:00 | 23-Oct-22 04:00                                                                       |    |        |        |        |        |   |   |   |   |   |   |   |   |  |  |
|                                                                                                           |  U-43-EXE-GB-20          | Cleaning and Inspection        | 200h            | 14-Oct-22 20:00 | 23-Oct-22 04:00                                                                       |    |        |        |        |        |   |   |   |   |   |   |   |   |  |  |
|                                                                                                           |  ASSEMBLING             |                                | 260h            | 23-Oct-22 04:00 | 03-Nov-22 00:00                                                                       |   |        |        |        |        |   |   |   |   |   |   |   |   |  |  |
|                                                                                                           |  U-43-EXE-GB-30        | Reassembling                   | 260h            | 23-Oct-22 04:00 | 03-Nov-22 00:00                                                                       |  |        |        |        |        |   |   |   |   |   |   |   |   |  |  |
|                                                                                                           |  PROCESS SECTION       |                                | 720h            | 04-Oct-22 00:00 | 03-Nov-22 00:00                                                                       |  |        |        |        |        |   |   |   |   |   |   |   |   |  |  |
|                                                                                                           |  DISMANTLING           |                                | 260h            | 04-Oct-22 00:00 | 14-Oct-22 20:00                                                                       |  |        |        |        |        |   |   |   |   |   |   |   |   |  |  |
|                                                                                                           |  U-43-EXE-PS-10        | Dismantling of Process Section | 260h            | 04-Oct-22 00:00 | 14-Oct-22 20:00                                                                       |  |        |        |        |        |   |   |   |   |   |   |   |   |  |  |
|                                                                                                           |  CLEANING & INSPECTION |                                | 200h            | 14-Oct-22 20:00 | 23-Oct-22 04:00                                                                       |  |        |        |        |        |   |   |   |   |   |   |   |   |  |  |
|                                                                                                           |  U-43-EXE-PS-20        | Cleaning and Inspection        | 200h            | 14-Oct-22 20:00 | 23-Oct-22 04:00                                                                       |  |        |        |        |        |   |   |   |   |   |   |   |   |  |  |
|                                                                                                           |  ASSEMBLING            |                                | 260h            | 23-Oct-22 04:00 | 03-Nov-22 00:00                                                                       |  |        |        |        |        |   |   |   |   |   |   |   |   |  |  |
|                                                                                                           |  U-43-EXE-PS-30        | Reassembling                   | 260h            | 23-Oct-22 04:00 | 03-Nov-22 00:00                                                                       |  |        |        |        |        |   |   |   |   |   |   |   |   |  |  |
|  PELLET DYER           |                                                                                                           | 720h                           | 04-Oct-22 00:00 | 03-Nov-22 00:00 |  |                                                                                       |        |        |        |        |   |   |   |   |   |   |   |   |  |  |
|  DISMANTLING           |                                                                                                           | 260h                           | 04-Oct-22 00:00 | 14-Oct-22 20:00 |  |                                                                                       |        |        |        |        |   |   |   |   |   |   |   |   |  |  |
|  U-43-EXE-PD-10        | Dismantling of Pellet Dyer                                                                                | 260h                           | 04-Oct-22 00:00 | 14-Oct-22 20:00 |  |                                                                                       |        |        |        |        |   |   |   |   |   |   |   |   |  |  |
|  CLEANING & INSPECTION |                                                                                                           | 200h                           | 14-Oct-22 20:00 | 23-Oct-22 04:00 |  |                                                                                       |        |        |        |        |   |   |   |   |   |   |   |   |  |  |

 Actual Work    
  Summary    
  Milestone

 Critical Remaining Work    
  Remaining Work

### ***BIDDING SCHEDULE***

Page 1 of 4

| Date            | Revision | Checked | Approved |
|-----------------|----------|---------|----------|
| 04-Oct-22 00:00 |          |         |          |



## SITE EXECUTION SERVICE ,INSPECTION AND OVERHAUL ON EXTRUDER MACHINES (SPCO TA 2022)

[illegible]

| REQ# 25000942                                                                                           |                        | SITE EXECUTION SERVICE ,INSPECTION AND OVERHAUL ON EXTRUDER MACHINES (SPCO TA 2022) |                 |                 |        |        |   |   |        |   |   |        |   |   |        |   |   |        |   |
|---------------------------------------------------------------------------------------------------------|------------------------|-------------------------------------------------------------------------------------|-----------------|-----------------|--------|--------|---|---|--------|---|---|--------|---|---|--------|---|---|--------|---|
| Activity ID                                                                                             | Activity Name          | Original Duration                                                                   | Start           | Finish          | Oct 02 | Oct 09 |   |   | Oct 16 |   |   | Oct 23 |   |   | Oct 30 |   |   | Nov 06 |   |
|                                                                                                         |                        |                                                                                     |                 |                 | T      | T      | F | S | S      | T | T | F      | S | S | T      | T | F | S      | S |
|  U-44-EXE-PD-30        | Reassembling           | 260h                                                                                | 23-Oct-22 04:00 | 03-Nov-22 00:00 |        |        |   |   |        |   |   |        |   |   |        |   |   |        |   |
|  COMMISSIONING/STARTUP |                        | 72h                                                                                 | 03-Nov-22 00:00 | 06-Nov-22 00:00 |        |        |   |   |        |   |   |        |   |   |        |   |   |        |   |
|  CS-100                | Commissioning/ Startup | 72h                                                                                 | 03-Nov-22 00:00 | 06-Nov-22 00:00 |        |        |   |   |        |   |   |        |   |   |        |   |   |        |   |

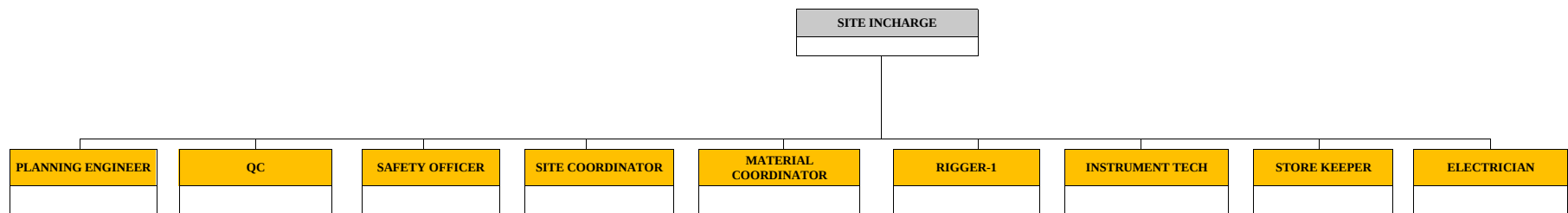


**SMH INDUSTRIAL SERVICES COMPANY LTD.**

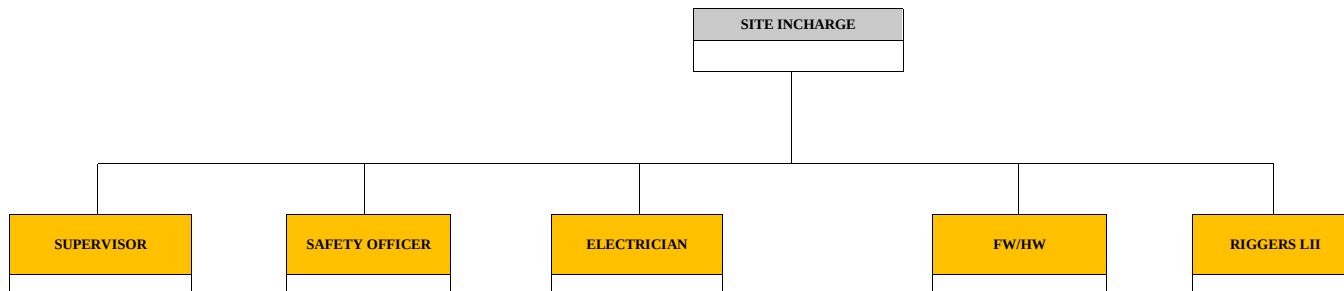
**RFP- REQ 25000942 S-CHEM SITE EXECUTION SERVICE ,INSPECTION AND OVERHAUL ON EXTRUDER MACHINES (SPCO TA 2022)**

**ORGANIZATION CHART**

DAY SHIFT



NIGHT SHIFT



|                                                                                   |                                                                                                  |              |                |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp; Industrial Services Company Ltd</b><br><br><b>IMS Manual</b> | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                                  | Rev. No.     | 00             |
|                                                                                   |                                                                                                  | Issue Date   | 31-03-2021     |

# Yes Yem Yech Manufacturing & Industrial Services Co. Ltd

## INTEGRATED MANAGEMENT SYSTEM MANUAL



### Main Office Address

SMH Main Office, PO Box 488, Al-Jubail 31951, Support Industrial Area 3, Al-Jubail, KSA

Contact details: +966 13 342 0505

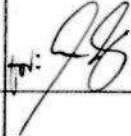
Mail: [info@smharabia.com](mailto:info@smharabia.com)

Website: <https://www.smharabia.com/>

All documents are "CONTROLLED" when viewed on SMH Industrial Services Co. Intranet. When downloaded and printed, this document becomes "UNCONTROLLED" and user should check the SMH Industrial Services Co. Intranet to ensure that they have the latest version.

|                                                                                   |                                                                                              |  |              |                |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp; Industrial Services Company Ltd</b><br><b>IMS Manual</b> |  | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                              |  | Rev. No.     | 00             |
|                                                                                   |                                                                                              |  | Issue Date   | 31-03-2021     |

## APPROVAL SHEET

|              | DESIGNATION       | SIGNATURE                                                                          | DATE       |
|--------------|-------------------|------------------------------------------------------------------------------------|------------|
| Prepared by: | ADMIN & HSE       |  | 17-05-2021 |
| Reviewed by: | DIRECTOR GENERAL  |  | 17-05-2021 |
| Approved by: | MANAGING DIRECTOR |  | 17-05-2021 |

## AMENDMENT SHEET

| Date       | Issue # | Amendment Detail            | Section Affected | Amendment Approved by | Signatures |
|------------|---------|-----------------------------|------------------|-----------------------|------------|
| 31-04-2021 | 01      | Initial Issue of IMS Manual | -                | -                     |            |
|            |         |                             |                  |                       |            |
|            |         |                             |                  |                       |            |
|            |         |                             |                  |                       |            |
|            |         |                             |                  |                       |            |
|            |         |                             |                  |                       |            |
|            |         |                             |                  |                       |            |
|            |         |                             |                  |                       |            |



|                                                                                   |                                                                                                      |              |                |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp;<br/>Industrial Services Company Ltd</b><br><br><b>IMS Manual</b> | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                                      | Rev. No.     | 00             |
|                                                                                   |                                                                                                      | Issue Date   | 31-03-2021     |

## TABLE OF CONTENTS:

| SECTION | DESCRIPTION                                          | RELATED CLAUSE #                                                    | PAGE |
|---------|------------------------------------------------------|---------------------------------------------------------------------|------|
| 1.0     | Scope of the Integrated Management System            | ISO 9001:2015 (1.0)<br>ISO 14001:2015 (1.0)<br>ISO 45001:2018 (1.0) | 6    |
| 2.0     | Normative References                                 | ISO 9001:2015 (2.0)<br>ISO 14001:2015 (2.0)<br>ISO 45001:2018 (2.0) | 6    |
| 3.0     | Terms and Definitions                                | ISO 9001:2015 (3.0)<br>ISO 14001:2015 (3.0)<br>ISO 45001:2018 (3.0) | 6    |
| 4.1     | Understanding the Organization and its context       | ISO 9001:2015 (4.1)<br>ISO 14001:2015 (4.1)<br>ISO 45001:2018 (4.1) | 9    |
| 4.2     | Interested parties - Needs and Expectations          | ISO 9001:2015 (4.2)<br>ISO 14001:2015 (4.2)<br>ISO 45001:2018 (4.2) | 11   |
| 4.3     | IMS Management System Scope                          | ISO 9001:2015 (4.3)<br>ISO 14001:2015 (4.3)<br>ISO 45001:2018 (4.3) | 12   |
| 4.4     | IMS Management System                                | ISO 9001:2015 (4.4)<br>ISO 14001:2015 (4.4)<br>ISO 45001:2018 (4.4) | 12   |
| 5.1     | Leadership and Commitment                            | ISO 9001:2015 (5.1)<br>ISO 14001:2015 (5.1)<br>ISO 45001:2018 (5.1) | 14   |
| 5.2     | Quality Policy and EHS Policy                        | ISO 9001:2015 (5.2)<br>ISO 14001:2015 (5.2)<br>ISO 45001:2018 (5.2) | 15   |
| 5.3     | Organization roles, responsibilities and authorities | ISO 9001:2015 (5.3)<br>ISO 14001:2015 (5.3)<br>ISO 45001:2018 (5.3) | 16   |
| 5.4     | Consultation and participation of workers            | ISO 45001:2018 (5.4)                                                | 17   |
| 6.1     | Actions to address risks and opportunities           | ISO 9001:2015 (6.1)<br>ISO 14001:2015 (6.1)<br>ISO 45001:2018 (6.1) | 18   |

|                                                                                   |                                                                                                      |              |                |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp;<br/>Industrial Services Company Ltd</b><br><br><b>IMS Manual</b> | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                                      | Rev. No.     | 00             |
|                                                                                   |                                                                                                      | Issue Date   | 31-03-2021     |

|     |                                                       |                                                                     |    |
|-----|-------------------------------------------------------|---------------------------------------------------------------------|----|
| 6.2 | IMS Objectives and planning to achieve them           | ISO 9001:2015 (6.2)<br>ISO 14001:2015 (6.2)<br>ISO 45001:2018 (6.2) | 18 |
| 6.3 | Planning of Changes                                   | ISO 9001:2015 (6.3)                                                 | 19 |
| 7.1 | Resources                                             | ISO 9001:2015 (7.1)<br>ISO 14001:2015 (7.1)<br>ISO 45001:2018 (7.1) | 19 |
| 7.2 | Competence                                            | ISO 9001:2015 (7.2)<br>ISO 14001:2015 (7.2)<br>ISO 45001:2018 (7.2) | 21 |
| 7.3 | Awareness                                             | ISO 9001:2015 (7.3)<br>ISO 14001:2015 (7.3)<br>ISO 45001:2018 (7.3) | 21 |
| 7.4 | Communication                                         | ISO 9001:2015 (7.4)<br>ISO 14001:2015 (7.4)<br>ISO 45001:2018 (7.4) | 21 |
| 7.5 | Documented Information                                | ISO 9001:2015 (7.5)<br>ISO 14001:2015 (7.5)<br>ISO 45001:2018 (7.5) | 22 |
| 8.1 | Operations planning and control                       | ISO 9001:2015 (8.1)<br>ISO 14001:2015 (8.1)<br>ISO 45001:2018 (8.1) | 22 |
| 8.2 | Requirements and review of services                   | ISO 9001:2015 (8.2)                                                 | 23 |
| 8.3 | Design and development                                | ISO 9001:2015 (8.3)                                                 | 24 |
| 8.4 | Control of externally provided processes and services | ISO 9001:2015 (8.4)                                                 | 24 |
| 8.5 | Control of Service provision                          | ISO 9001:2015 (8.5)                                                 | 26 |
| 8.6 | Release of Services                                   | ISO 9001:2015 (8.6)                                                 | 27 |
| 8.7 | Control of nonconforming outputs                      | ISO 9001:2015 (8.7)                                                 | 27 |

|                                                                                   |                                                                                                      |              |                |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp;<br/>Industrial Services Company Ltd</b><br><br><b>IMS Manual</b> | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                                      | Rev. No.     | 00             |
|                                                                                   |                                                                                                      | Issue Date   | 31-03-2021     |

|       |                                                |                                                                           |    |
|-------|------------------------------------------------|---------------------------------------------------------------------------|----|
| 8.8   | Emergency Preparedness & Response              | ISO 14001:2015 (8.2)<br>ISO 45001:2018 (8.2)                              | 27 |
| 8.8   | Contractor Management                          | ISO 45001:2018 (8.1)                                                      | 28 |
| 9.1.1 | Monitoring, measuring, analysis and evaluation | ISO 9001:2015 (9.1.1)<br>ISO 14001:2015 (9.1.1)<br>ISO 45001:2018 (9.1.1) | 28 |
| 9.1.2 | Customer Satisfaction                          | ISO 9001:2015 (9.1.2)                                                     | 28 |
| 9.1.3 | Analysis and Evaluation                        | ISO 9001:2015 (9.1.3)                                                     | 29 |
| 9.1.4 | Evaluation of Compliance                       | ISO 14001:2015 (9.1.2)<br>ISO 45001:2018 (9.1.2)                          | 29 |
| 9.2   | Internal Audit                                 | ISO 9001:2015 (9.2)<br>ISO 14001:2015 (9.2)<br>ISO 45001:2018 (9.2)       | 29 |
| 9.3   | Management Review                              | ISO 9001:2015 (9.3)<br>ISO 14001:2015 (9.3)<br>ISO 45001:2018 (9.3)       | 30 |
| 10.1  | Improvement                                    | ISO 9001:2015 (10.1)<br>ISO 14001:2015 (10.1)<br>ISO 45001:2018 (10.1)    | 30 |
| 10.2  | Incident, Non-conformity & Corrective Action   | ISO 9001:2015 (10.2)<br>ISO 14001:2015 (10.2)<br>ISO 45001:2018 (10.2)    | 30 |
| 10.3  | Continual Improvement                          | ISO 9001:2015 (10.3)<br>ISO 14001:2015 (10.3)<br>ISO 45001:2018 (10.3)    | 31 |



|                                                                                   |                                                                                                  |              |                |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp; Industrial Services Company Ltd</b><br><br><b>IMS Manual</b> | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                                  | Rev. No.     | 00             |
|                                                                                   |                                                                                                  | Issue Date   | 31-03-2021     |

## 1. Scope

The Integrated Management System (IMS) presented within this manual and its supporting procedures reflect SMH Industrial Services Co. Ltd 's strategic decision to adopt a process approach throughout the organization to ensure compliance with customer requirements, enhance customer satisfaction, fulfill legal obligations, prevention of work-related injury and ill health, eliminate hazards and minimize OH&S risks, provision of safe and healthy workplace, provide value for environment, achieve QHSE objectives, improve QHSE performance and continual improvement of the organization.

This approach considers the application of a system of processes throughout our organization, as well as the identification and interaction of these processes, and their management. This integrated management system is consistent with the requirements specified by ISO 9001:2015, ISO 45001:2018 and ISO 14001:2015. The procedures, policies and practices presented herein are applicable throughout all areas and levels of the organization. All personnel under the control of SMH are responsible to perform the activities and deliver services in conformance with the requirements of this QHSE MS.

**Abbreviations used in this IMS Manual are as follows:**

Quality, Health, Safety and Environmental Management System referred as "QHSE MS"

SMH Industrial Services Co. Ltd will be referred as "SMH"

Integrated Management System will be referred as "IMS"

Quality Management System will be referred as "QMS"

Occupational Health & Safety management System will be referred as "OHSMS"

Environmental Management System will be referred as "EMS"

Management Representative will be referred as "MR"

## 2. Normative References

The QMS, EMS and OHSMS adopt High Level Structure (HLS) in accordance with ISO 9001:2015, 14001:2015 and ISO 45001:2018 requirements respectively.

ISO 9000:2015 Quality Management Systems - Fundamentals and Vocabulary is applicable for the ISO 9001:2015 QMS related documentation. There are no applicable normative references for EMS and OHSMS.

## 3. Terms and Definitions

The Following terms and definitions used within this IMS Manual are in accordance with ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018.

- 3.1.1 **Documented Information:** Information required to be controlled by an organization and the medium on which it contained.
- 3.1.2 **Effectiveness:** Extent to which planned activities are realized & planned results achieved.
- 3.1.3 **Infrastructure:** (organization) system of facilities, equipment and services needed for the operation of an organization

|                                                                                   |                                                                                              |              |                |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp; Industrial Services Company Ltd</b><br><b>IMS Manual</b> | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                              | Rev. No.     | 00             |
|                                                                                   |                                                                                              | Issue Date   | 31-03-2021     |

- 3.1.4 **Management System:** System to establish policy & objectives and to achieve those objectives.
- 3.1.5 **Organization:** Person or group of people that has its own function with responsibilities, authorities and relationship to achieve its objectives / company, corporation, firm, enterprise, authority or institution, or part or combination thereof, whether incorporated or not, public or private, that has its own functions and administration
- 3.1.6 **Top Management:** Person or group of people who directs and controls an organization at the highest level.
- 3.1.7 **Procedure:** Specified way to carry out any activity or a process.
- 3.1.8 **Process Flow Chart:** A map of a sequence of events or a combination of activities, inputs, controls and mechanisms & outputs.
- 3.1.9 **Process Mapping:** A methodology that seeks to describe existing business functions for the purpose of understanding the activities involved.
- 3.1.10 **Product:** Result of a process.
- 3.1.11 **Quality:** Degree to which a set of inherent characteristics fulfils requirements.
- 3.1.12 **Risk:** Effect of uncertainty
- 3.1.13 **Competence:** Ability to apply knowledge and skills to achieve intended results
- 3.1.14 **Outsource:** make an arrangement where an external organization performs part of an organization's function or process.
- 3.1.15 **Compliance Obligations:** Legal requirements and other requirements.
- 3.1.16 **Requirement:** Need or expectation that is stated, generally implied or obligatory.
- 3.1.17 **Interested Party:** Person or organization that can affect, be affected by, or perceive itself to be affected by a decision or activity.
- 3.1.18 **Conformity:** Fulfilment of a requirement.
- 3.1.19 **Process:** Set of Interrelated or interacting activities which transforms inputs into outputs.
- 3.1.20 **Nonconformity:** Non-Fulfilment of a requirement.
- 3.1.21 **Continual Improvement:** Recurring activity to enhance performance
- 3.1.22 **EMS (EMS):** part of the management system used to manage environmental aspects, fulfil compliance obligations, and address risks and opportunities.
- 3.1.23 **Environmental Policy:** intentions and direction of an organization related to environmental compliance and performance, as formally expressed by its top management.
- 3.1.24 **Environment:** surroundings in which an organization (3.1.4) operates, including air, water, land, natural resources, flora, fauna, humans and their interrelationships.  
Note: Surroundings can extend from within an organization to the local, regional and global system. Surroundings can be described in terms of biodiversity, ecosystems, climate or other characteristics.
- 3.1.25 **Environmental Aspect:** element of an organization's activities, products or services that interacts or can interact with the environment. An environmental aspect can cause (an) environmental impact(s).
- 3.1.26 **Environmental Condition:** state or characteristic of the environment as determined at a certain point in time.
- 3.1.27 **Environmental Impact:** change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's environmental aspects.



|                                                                                   |                                                                                                      |              |                |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp;<br/>Industrial Services Company Ltd</b><br><br><b>IMS Manual</b> | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                                      | Rev. No.     | 00             |
|                                                                                   |                                                                                                      | Issue Date   | 31-03-2021     |

- 3.1.28 **Objective:** result to be achieved - strategic, tactical, or operational
- 3.1.29 **Environmental objective:** objective/s set by the organization consistent with its environmental policy e.g. flare reduction, water conservation, hazardous waste, oils spills etc.
- 3.1.30 **Pollution Prevention:** use of processes (3.3.5), practices, techniques, materials, products, services or energy to avoid, reduce or control (separately or in combination) the creation, emission or discharge of any type of pollutant or waste, in order to reduce adverse environmental impacts (3.2.4). Note: Prevention of pollution can include source reduction or elimination; process, product or service changes; efficient use of resources; material and energy substitution; reuse; recovery; recycling, reclamation; or treatment.
- 3.1.31 **Risks and opportunities:** potential adverse effects (threats) and potential beneficial effects (opportunities)
- 3.1.32 **Life cycle:** consecutive and interlinked stages of a product (or service) system, from raw material acquisition or generation from natural resources to final disposal. Note: The life cycle stages include acquisition of raw materials, design, production, transportation/delivery, use, end-of-life treatment and final disposal.
- 3.1.33 **Outsource:** make an arrangement where an external organization performs part of an organization's function or process. Note: An external organization is outside the scope of the management system, although the outsourced function or process is within the scope.
- 3.1.34 **Indicator:** measurable representation of the condition or status of operations, management or conditions.
- 3.1.35 **Monitoring:** determining the status of a system, a process or an activity.
- 3.1.36 **Measurement:** process to determine a value.
- 3.1.37 **Performance:** measurable result. Note: Performance can relate either to quantitative or qualitative findings and can relate to the management of activities, processes, products (including services), systems or organizations.
- 3.1.38 **Environmental performance:** performance related to the management of environmental aspects. Note: For an EMS, results can be measured against the organization's environmental policy, environmental objectives or other criteria, using indicators.
- 3.1.39 **OHSMS:** Management system or part of a management system used to achieve the OH&S policy
- 3.1.40 **OH&S Policy:** Policy to prevent work-related injury and ill health to worker(s) and to provide a safe and healthy workplace(s)
- 3.1.41 **OH&S Objectives:** Objective set by the organization to achieve specific results consistent with the OH&S policy
- 3.1.42 **Hazard:** Source, situation, with a potential to cause injury and ill health
- 3.1.43 **Worker:** Person performing work or work-related activities under the control of the organization
- 3.1.44 **Contractor:** External organization providing services to the organization at a workplace in accordance with agreed specifications, terms and conditions.
- 3.1.45 **Injury and Ill Health:** Adverse effect on the physical, mental or cognitive condition of a person Note 1 to entry: These conditions may include occupational disease, illness and death.
- 3.1.46 **OH&S Risk:** Combination of the likelihood of occurrence of a work-related hazardous event or exposure(s) and the severity of injury and ill health that can be caused by the event or

|                                                                                   |                                                                                                  |              |                |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp; Industrial Services Company Ltd</b><br><br><b>IMS Manual</b> | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                                  | Rev. No.     | 00             |
|                                                                                   |                                                                                                  | Issue Date   | 31-03-2021     |

exposures.

- 3.1.47 **OH&S Opportunity:** Circumstance or set of circumstances that can lead to improvement of OH&S performance.
- 3.1.48 **OH&S Performance:** Performance related to the effectiveness of the prevention of injury and ill health to workers and the provision of safe and healthy workplace(s)
- 3.1.49 **Consultation:** Process by which the organization seeks the views of the workers before it makes a decision.
- 3.1.50 **Participation:** Involvement of workers in decision-making process(es) in the OH&S management system
- 3.1.51 **Audit:** Systematic, independent and documented process for obtaining audit evidence and evaluation it objectively to determine the extent to which the audit criteria are fulfilled.

## 4. Context of SMH Industrial Co. Ltd.

### 4.1 Understanding the Organization and its Context

SMH Industrial Services Co., Ltd is a Rotating Equipment Specialist with broad experience in Operations and Maintenance, Project Management and Industrial Support services.

SMH has grown to become an industry partner with clients, specifically in the oil & gas and petrochemicals sectors. SMH has been providing cost-effective solutions to clients' requirements delivering timely with the highest standards of quality and strict adherence to the best safety practices.

SMH's principal asset is a team of Technical Experts whose undertaking is a concerted effort to ensure clients total satisfaction. The company is privileged to be of service to the renowned Industrial giants i.e. SABIC, Saudi Chevron, Petrochemical Conversion Company, Tasnee, Satorp and various international companies in Oil & Gas, Petrochemicals, Fertilizers and Metal sector. SMH aims to be a good Corporate Citizen by encouraging local workforce wherever possible.

We inspire partnership, transparency and reliability stretching beyond the boundaries of a Client-Contractor relationship. Our success in the business is mainly due to strict adherence to our ultimate aim... assurance of health and safety of people, the preservation of the environment and Excellence in Service.

#### Mission of SMH:

To perform consistently & deliver value added services to our Clients by providing highest quality of expertise to meet Client's expectations and thus ensuring a Long-Term Relationship.

#### Vision of SMH:

To be Specialist in Rotating Equipment Maintenance Services.



|                                                                                   |                                                                                              |  |              |                |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp; Industrial Services Company Ltd</b><br><b>IMS Manual</b> |  | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                              |  | Rev. No.     | 00             |
|                                                                                   |                                                                                              |  | Issue Date   | 31-03-2021     |

#### SMH Services:

- ✚ Shutdown and Turnaround
- ✚ Plant Operation and Maintenance
- ✚ Project Management and Industrial Support Services
- ✚ Rotating Equipment Maintenance and Repairs
- ✚ Reliability Centered Maintenance
  - ❖ Amcs Condition Monitoring Services
  - ❖ Case to Case Vibration Analysis, In-Situ Balancing
  - ❖ End to End Implementation of RCM
  - ❖ Engineering Simulation
  - ❖ Calibration Services
  - ❖ Vibration Analysis Certification Training Programs
- ✚ Sale of ICM Products
  - ❖ Emonitor Condition Monitoring Software
  - ❖ Integrated Machine Condition Monitoring System
  - ❖ Protection Module
  - ❖ Portable Data Collectors
  - ❖ Condition Monitoring Sensors

#### EHS Vision of SMH:

"To be the best follower of Safety, Health & Environmental Standards in Petrochemical Industries."

- ✚ Achieving Vibrant Management Systems
- ✚ Committed Safety Culture
- ✚ Discipline Adherence to Standards
- ✚ Enhanced Applications and Sharing of Learned
- ✚ Competency Development

#### EHS Objective of SMH:

"Zero incident" rate for Safety, Health & Environment.

|                                                                                   |                                                                                              |              |                |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp; Industrial Services Company Ltd</b><br><b>IMS Manual</b> | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                              | Rev. No.     | 00             |
|                                                                                   |                                                                                              | Issue Date   | 31-03-2021     |

#### Fundamental Safety Beliefs of SMH:

- ❖ Safety is a core business and a personal value
- ❖ Safety is a source of our competitive advantage
  - ❖ SMH will strengthen the business by making safety excellence an integral part of all activities.
  - ❖ SMH believe that all accidents and incidents are preventable
  - ❖ All levels of management are accountable for our safety performance, starting with the President.

#### Core Elements of SMH Safety Strategy Top Management Commitment:

- ❖ Safety excellence will be a component of our mission
- ❖ Senior management will demonstrate their continual commitment to safety.
- ❖ Senior management will hold all employees accountable for safety performance.

#### Responsibility & Accountability Of All Employees

- ❖ Safety performance will be an important part of our management/employee evaluation system.
- ❖ SMH will recognize and reward safety performance.
- ❖ SMH will make everyone aware of the safety rules and processes as well as their personal responsibility to observe them.

#### Clearly Communicated Expectations Of Zero Incidents

- ❖ SMH will have a formal written safety goal and ensure everyone understands and accepts that goal.
- ❖ SMH will have a communications and motivation system in place to keep our people focused on the safety goal.

#### References:

- *Context of SMH Procedure*
- *SWOT Analysis*

## 4.2 Needs and Expectations of Interested Parties

SMH has determined relevant interested parties including employees (workers) and their needs and expectations that are relevant to QHSE MS. SMH also identified the requirements of the interested parties including workers, and identified which of the requirements are or could become OH&S legal requirements and environmental compliance obligations. During Management Review, SMH monitor and review information about these interested parties and their relevant requirements.

#### References:

- *Interested Parties Register*
- *Legal and other Requirements Register*



|                                                                                   |                                                                                                  |              |                |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp; Industrial Services Company Ltd</b><br><br><b>IMS Manual</b> | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                                  | Rev. No.     | 00             |
|                                                                                   |                                                                                                  | Issue Date   | 31-03-2021     |

### 4.3 IMS Management System Scope

SMH has determined and documented the scope considering Internal and External issues, requirements of relevant interested parties (including legal and other requirements), environmental compliance obligation, activities and services, organization units, function and physical boundaries, planned & performed work related activities and authorities & ability to exercise control and influence and

The documented IMS scope of SMH is: *Repair and maintenance of machines dedicated for metalizing and construction for oil and gas fields – Repair and maintenance of clutches and gears – construction and repair of electric power plants and transformers – operation and maintenance of pumping stations and pipelines – loading and unloading of goods – cleaning of industrial machines and equipment / Manufacturing pipes and hallow shapes of iron and steel - manufacturing valves and electronic couplers – manufacturing internal combustion engine with their parts – ball bearings and roller bearings including balls, needles and metal circles and burrs – manufacturing of auto tools for rotation.*

#### **“SMH APPROVED SCOPE”**

The SMH IMS Management System provides a mechanism for management of QMS, OH&S and EMS throughout all areas, work field and all departments. The Integrated Management System is designed to achieve customer satisfaction by consistently providing conforming services and meeting or exceeding customer and applicable regulatory requirements through application of the system, continual improvement and the prevention of nonconformity. It also covers Environmental Aspects and Impacts, Occupational Health & Safety Hazards and Business Risks which SMH can control and directly manage, and those it does not control or directly manage but can be expected to have an influence. This manual covers the QHSE related activities of head office and sites operations while accounts is not in the scope.

Following exclusions has been made by company.

“ISO 9001:2015 Clause 8.3 Design & Development” is not a requirement of business activity because SMH are providing services based on customer requirements. Hence this requirement is excluded from the scope of QMS.

### 4.4 IMS Management System

SMH has established, documented, implemented, maintained an “Integrated Management System (IMS)” and continually improves its effectiveness as per requirements of ISO 9001:2015, ISO 45001:2018 & ISO 14001:2015 standards. To implement and continually improve the effectiveness of the Integrated Management System, SMH has managed to:

- Identify the processes needed for the IMS and their applications throughout the organization;
- Determine the inputs required and output expected from these processes;



|                                                                                   |                                                                                              |  |              |                |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp; Industrial Services Company Ltd</b><br><b>IMS Manual</b> |  | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                              |  | Rev. No.     | 00             |
|                                                                                   |                                                                                              |  | Issue Date   | 31-03-2021     |

- c) Determine the sequence and interaction of these processes;
- d) Determine criteria and methods required to ensure the effective operation and control of these processes;
- e) Ensure the availability of resources and information necessary to support the operation and monitoring of these processes, and to monitor, measure, and analyze these processes;
- f) Assign responsibilities and authorities for the processes;
- g) Address the risks and opportunities as determined during planning stage of IMS;
- h) Evaluate the process and Implement actions necessary to achieve the planned results and continual improvement of these processes;
- i) Improve the processes and IMS.

SMH has prepared its Integrated Management System documentation, which includes:

- a) Documented Statements of Quality policy, EHS Policy and IMS Objectives
- b) Organization Chart
- c) IMS Management System Manual

Quality policy, EHS Policy, IMS Manual and IMS Objectives/Targets are top- level documents outlining the structure and general principles of the Quality, Health & Safety and Environmental Management System. It includes:

**a. System Procedures**

The system procedures are the second level system documents, which contain a detailed description of how IMS Management System requirements, as specified by ISO 9001:2015, ISO 45001:2018 & ISO 14001:2015 standard, have been addressed and implemented in various functions of the SMH. The System procedures serve as an operational guide for all the concerned departmental staff to ensure that operations are carried out in a controlled and systematic manner as per IMS requirements.

**b. Process Flow / Process Realization Plan**

Process Flow Charts / Process Realization Plan are second level process -specific documents that describe all the key operations or processes to be carried out during the operation or realization of services and specifies what integrated management system requirements are to be met to ensure compliance with client requirements.

**c. Standard Operating Procedures/ Safe Work Procedures**

The Standard Operating Procedures are third level documents, which contains instructions for individuals to perform routine tasks or specific functions. The Standard Operating Procedures and Safe Work Procedures are then distributed and, where required, displayed at the related workplace to ensure that the activities are performed as per instructions. Management Representative (MR) maintains the distribution status of SOPs on the Master List of Documents.

**d. Reference Regulations and Standards**

|                                                                                   |                                                                                              |              |                |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp; Industrial Services Company Ltd</b><br><b>IMS Manual</b> | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                              | Rev. No.     | 00             |
|                                                                                   |                                                                                              | Issue Date   | 31-03-2021     |

These include all the legal and regulatory requirements that apply to various aspects of the SMH services.

#### e. Forms and Records

These are fourth level IMS system documents, which include documented forms and records required in the Integrated Management System of SMH. These are properly referenced in all the relevant procedures, and include data/records such as test reports, forms, log sheet and other reports generated while performing routine activities.

The Integrated Management System (IMS) document structure is given below:



## 5. Leadership

### 5.1 Leadership and Commitment

Top Management of SMH demonstrated Leadership and Commitment with respect to QMS, EMS and OHSMS by:

- Taking accountability for the effectiveness of QMS and EMS
- Taking overall responsibility and accountability for the prevention of work-related injury and ill health, as well as the provision of safe and healthy workplaces and activities;
- Ensuring that the quality policy, EHS Policy and QHSE Objectives are established and are compatible with the strategic direction and the context of the organization;
- Ensuring the integration of QMS, OHSMS and EMS into organization's business processes;
- Promoting the use of process approach and risk-based thinking;
- Ensuring that the resources needed for QMS, OHSMS and EMS are available;
- Communicating the importance of effective quality management, OH&S management and environmental management and of conforming to the requirements of QMS, OHSMS and EMS;
- Ensuring that the QMS, OHSMS and EMS achieves its intended results/outcomes;



|                                                                                   |                                                                                              |              |                |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp; Industrial Services Company Ltd</b><br><b>IMS Manual</b> | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                              | Rev. No.     | 00             |
|                                                                                   |                                                                                              | Issue Date   | 31-03-2021     |

- Engaging, directing and supporting persons to contribute to the effectiveness of QMS, EMS and OHSMS
- Promoting Continual Improvement;
- Supporting other relevant management roles to demonstrate their leadership as it applies to their areas of responsibility;
- Developing, leading and promoting a culture in the organization that supports the intended outcomes of the OH&S Management System;
- Protecting workers from reprisals when reporting incidents, hazards, risks and opportunities;
- Ensuring the organization establishes and implements a process(es) for consultation and participation of workers;
- Supporting the establishment and functioning of health and safety committees.

### 5.1.2 Customer Focus

Top Management of SMH demonstrate leadership and commitment with respect to customer focus by ensuring that:

- a) customer and applicable statutory and regulatory requirements are determined, understood and consistently met;
- b) the risks and opportunities that can affect conformity of products and services and the ability to enhance customer satisfaction are determined and addressed;
- c) the focus of enhancing customer satisfaction is maintained.

## 5.2 Quality Policy and EHS Policy

SMH has established, implemented and maintained its Quality Policy that:

- a) Is appropriate to the purpose and context of SMH and supports its strategic direction;
- b) Provides a framework for setting quality objectives;
- c) Includes a commitment to satisfy applicable requirements;
- d) Includes a commitment to continual improvement of the QMS

SMH has established, implemented and maintained its EHS Policy that:

- a) Includes a commitment to provide safe and healthy working conditions for the prevention of work-related injury or ill health and is appropriate to the purpose, size and context of the organization and to the specific nature of OH&S risks and OH&S opportunities;
- b) Provides a framework for setting the OH&S Objectives and Environmental Objectives;
- c) Includes commitment for prevention of pollution and to comply with applicable legal and other requirements;
- d) Includes a commitment to eliminate hazards and reduce OH&S risks and consultation and participation of workers
- e) Include commitment to comply with applicable business, Environmental, OH&S legislation

|                                                                                   |                                                                                              |              |                |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp; Industrial Services Company Ltd</b><br><b>IMS Manual</b> | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                              | Rev. No.     | 00             |
|                                                                                   |                                                                                              | Issue Date   | 31-03-2021     |

- f) Is communicated, understood and implemented throughout the organization
- g) Is regularly reviewed for continuing suitability at appropriate level of the organization

The Quality Policy and EHS Policy is communicated and enforced through management reviews, training, displays in English at appropriate locations in offices and functional Managers conduct regular sessions with existing employees and new employees to ensure that Quality Policy and EHS Policy is understood by all. Whenever interested party required, SMH shares the Quality Policy and EHS Policy. The Quality Policy and EHS Policy is reviewed in the management review meetings for its continuous suitability and improvement.

#### Reference:

- Quality Policy
- EHS Policy
- Communication records of Quality and EHS Policy

### 5.3 Organizational, Roles, Responsibilities and Authorities

SMH considers Human Resources Management as one of the most important processes of the Integrated Management System. The basic aim is to ensure right person for the right job. This includes resources for:

- a) Satisfaction of customers / Client and processes delivering intended outputs;
- b) Health and safety of employees for Hazards free operations;
- c) Operations with Environmentally friendly manner;
- d) IMS Performance reporting to Top Management;
- e) Continual Improvement of the IMS Management System;
- f) Maintain integrity when changes to IMS.

SMH assigns responsibilities defined in the IMS to personnel ensuring that they are competent on the basis of defined education, training, skills and experience. Their qualification and experience data are effectively maintained in personal files.

Responsibilities and authorities for relevant roles are assigned by the SMH top management and communicated within this organization. SMH top management assigns roles and responsibilities for ensuring that the IMS conforms to ISO 9001:2015, ISO 45001:2018 and ISO 14001:2015 and reporting on the performance of the IMS to the executive management. SMH top management also ensures process delivering intended outputs, promotion of customer focus and maintain integrity, when changes to IMS happens.

- a) The organizational charts describe the hierarchical structure of SMH
- b) The Job descriptions of individuals describe the responsibilities and authorities of the SMH Personnel.



|                                                                                   |                                                                                              |              |                |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp; Industrial Services Company Ltd</b><br><b>IMS Manual</b> | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                              | Rev. No.     | 00             |
|                                                                                   |                                                                                              | Issue Date   | 31-03-2021     |

- c) The System Procedures, Process Flow Charts, Process Realization Plan and Standard Operating Procedures also describe the responsibilities of personnel in relation to various Integrated Management System requirements.
- d) SMH has Management Representative (MR) for effective coordination and execution of Integrated Management System
- e) SMH also has IMS Management Committee/ MR Committee for monitoring and implementation of Integrated Management System.

**Reference:**

- Organization Chart, Job Descriptions

## 5.4 Consultation and Participation of Workers

SMH established, implemented and maintained a process for consultation and participation of workers at all applicable levels and functions, and, where they exist workers representatives, in the development, planning, implementation, performance evaluation and actions for improvement of the OH&S Management System.

SMH provides a mechanism for training, consultation and participation of workers on OH&S issues. SMH provide timely access to clear, understandable and relevant information about the OH&S Management system. SMH committed to remove obstacles or barriers to participation and minimize those that cannot be removed;

SMH have consulted non-managerial workers during:

- 1) determining the needs and expectation of interested parties;
- 2) establishing EHS policy;
- 3) assigning organizational roles, responsibilities and authorities, as applicable;
- 4) determining how to fulfil legal requirements and other requirements;
- 5) establishing OH&S objectives and planning to achieve them;
- 6) determining applicable controls for outsourcing, procurement and contractors;
- 7) determining what needs to be monitored, measured and evaluated;
- 8) planning, establishing. Implementing and maintaining an audit programme(s);
- 9) ensuring continual improvement.

SMH encourages participation of non-managerial workers while:

- 1) determining the mechanism for their consultation and participation;
- 2) identifying hazards and assessing risks and opportunities;
- 3) determining actions to eliminate hazards and reduce OH&S risks;
- 4) determining competence requirements, training needs, training and evaluation of training;
- 5) determining the communication mechanism/process;
- 6) determining control measures and their effective implementation and use;
- 7) involved in investigating incident and nonconformities and determining corrective actions.

|                                                                                   |                                                                                                  |              |                |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp; Industrial Services Company Ltd</b><br><br><b>IMS Manual</b> | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                                  | Rev. No.     | 00             |
|                                                                                   |                                                                                                  | Issue Date   | 31-03-2021     |

#### Reference:

- *Communication, Participation and Consultation Procedure*

## 6.0 Leadership

### 6.1 Actions to address risks and opportunities

While IMS planning, SMH considers the context of the organization, needs and expectations of interested parties, and the scope of the IMS Management System. SMH determines Business related Risks and Opportunities, Occupational Health and Safety Hazards and Risks and Environmental Aspects & Impacts and to give assurance that the IMS can achieve intended results and outcomes.

SMH has established and maintained a procedure for identifying business risks, OH&S Hazard and risks and Environmental Aspects and Impacts. IMS-Management Committee initiates and involve in the Identification and risk assessment with respect to its scope, nature and timing to ensure it is proactive. These hazards are reviewed at least annually by the IMS Management Committee or when there is a new / changed process or activity at SMH.

The SMH has established a System Procedure for the purpose of identifying, accessing and communicating legal and other requirements that are applicable to SMH for Occupational Health & Safety and Environment services. Additional information is also available through legal publications. Local regulations are identified, accessed and communicated by the IMS Management Representative. SMH has documented procedures to evaluate compliance of legal requirements with relation of air pollution, noise level and effluent pollution. Records of periodic evaluation is maintained and discussed in Management Review meeting.

#### Reference:

- *Hazard Identification, Risk Assessment and Risk Control Procedure*
- *Environmental Aspects Identification and Significance Evaluation Procedure*
- *Legal Requirements, Compliance Obligation and Evaluation Procedure*

### 6.2 IMS Objectives and Planning to achieve them:

MR in consultation with respective departmental managers has established and maintained:

- ✚ Quality Objectives at relevant functions, levels and processes needed for QMS;
- ✚ Occupational Health and Safety objectives and targets, at each relevant function and levels to maintain and continually improve the OH&S Management System and OH&S Performance;
- ✚ Environmental objectives at relevant functions and levels, taking into account the organization's significant environmental aspects and associated compliance obligations, and considering its risks and opportunities;



|                                                                                   |                                                                                                  |              |                |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp; Industrial Services Company Ltd</b><br><br><b>IMS Manual</b> | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                                  | Rev. No.     | 00             |
|                                                                                   |                                                                                                  | Issue Date   | 31-03-2021     |

SMH determines the required resources to accomplish the IMS objectives, assign responsibilities with target completion time. Top Management of SMH reviewing IMS Objectives to determine the extent of completion, in management review meetings.

IMS Objectives are established and reviewed at least annually, considering its legal and other requirements, its OH&S hazards and risks, its technological options, its financial, operational, business requirements, and the views of interested parties.

When planning how to achieve its IMS objectives/KPIs, SMH determines:

- a) what will be done;
- b) what resources will be required;
- c) who will be responsible;
- d) when it will be completed;
- e) how the results will be evaluated, including indicators for monitoring IMS Performance;
- f) how the actions to achieve IMS objectives/KPIs will be integrated into the organization's processes.

SMH maintains and retains documented information on the IMS objectives/KPIs and plans to achieve them.

#### *Reference:*

- *IMS Objectives, Targets and Plans Procedure*

### 6.3 Planning of Changes:

Top Management of SMH has established MOC process for Change Management to control the changes within the QMS. Anybody within SMH can issue MOC (Management of Change) request and submit it to MR for further Action.

Following are considered while changing;

- Purpose of the changes and their potential consequences;
- Integrity of the quality management system;
- Availability of resources;
- Allocation / reallocation of responsibilities and authorities.

MR after analysis, log this request in MOC Log and submit MOC Request to Operation Manager for resources. MR follows up and closes the MOC Request after completion.

#### *Reference:*

- *Change Management Procedure*

## 7.0 Support

### 7.1 Resources:

|                                                                                   |                                                                                              |              |                |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp; Industrial Services Company Ltd</b><br><b>IMS Manual</b> | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                              | Rev. No.     | 00             |
|                                                                                   |                                                                                              | Issue Date   | 31-03-2021     |

SMH has determined and provided the resources needed for the establishment, implementation, maintenance and continual improvement of IMS. SMH has considered the capabilities of, and constraints on, existing internal resources and identified the resources to be obtained from external providers. Resources are the people, infra-structure, work environment, information, suppliers and financial resources.

Top Management of SMH has determined and provided all resources needed to:

- Implement, control and maintain the IMS Management System and continually improve its effectiveness
- Implement IMS Objectives

SMH has provided and maintained the infrastructure needed to achieve conformity to services required. Building, workplace, other facilities and associated utilities are provided. Facility layouts and drawing manuals, wherever appropriate is available with the concerned functional head.

- a) Machines and Equipment that relates to client related processes are provided, which helps the organization to fulfill the customer / client requirements and customer / Client satisfaction by providing quality services to them. Surveillance cameras are equipped in key monitoring areas. Security Check ins and Check Out controls established through Gate pass and Security Guards. Fire fighting and fire alarm systems installed in the entire SMH facility.
- b) Supporting services, such as transport, telephone, Fax machines, e-mail facilities, PC with printers are provided and maintained in good working condition to communicate with the customers / clients outside and in house. Meeting Rooms, Canteen facilities, Reception Office has also provided.
- c) Transport is provided and maintained in good working condition to SMH staff to deliver effective and timely services.

The top management of SMH ensures that a healthy, safe, and conducive environment is maintained in each department. SMH has determined and manages the work environment needed to achieve conformity to services requirements. This includes health and safety conditions.

Conditions under which work performed physical environment and other functions (such as noise, humidity and temperature, lighting or weather) are well maintained.

SMH has determined the monitoring and measuring resources required to perform the contractual services and ensures that they are calibrated and fit for use. Project Supervisor/Engineer maintain the list of calibrated equipment which includes equipment name, equipment ID, equipment location, calibration frequency, calibration date, next calibration due as the minimum requirements.

External Calibration agency performs calibration / re-calibration activity at SMH (as per req.) or their own premises and deliver calibration certificate along with equipment labels or paste label on equipment. Calibrated equipment is labeled with the sticker indicating the due date for next calibration with their Unique ID #.

SMH has determined the knowledge necessary for the operation of its processes and to achieve conformity of services. The required knowledge has been maintained with respective functional head



|                                                                                   |                                                                                                  |              |                |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp; Industrial Services Company Ltd</b><br><br><b>IMS Manual</b> | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                                  | Rev. No.     | 00             |
|                                                                                   |                                                                                                  | Issue Date   | 31-03-2021     |

and shared with his team member as per the job requirement. Any changes or updates, the respective functional head share the required updates/information with his team member.

**Reference:**

- *List of Machineries/tools and their Maintenance Records*
- *Calibration Equipments Log*

## 7.2 Competence:

SMH identifies, plans, monitors and records training needs for personnel whose work may create a significant impact upon the services with respect to Quality, Environment, and who are exposed to Health & Safety risk.

SMH has maintained a System Procedure to train employees at each relevant function and level so they are aware of Importance of Quality of services, Environment Aspect and their Impact, Occupational Health & Safety hazards / risks, their roles and responsibilities in achieving conformance with the policy and procedures.

**Reference:**

- *Competence, Training and Awareness Procedure*

## 7.3 Awareness:

SMH ensures awareness among the employees including workers as mentioned below as minimum:

- IMS Policy and Objectives.
- Their contribution to improve IMS performance.
- Implications and potential consequences of not conforming to IMS including not fulfilling SMH compliance obligations.
- Incidents and the outcome of investigations that are relevant to them.
- Hazards, OH&S Risks and the actions determined that are relevant to them.
- Ability to remove themselves from work situations that they consider present and imminent and their serious danger to their life or health, as well as the arrangements for protecting them from undue consequences for doing so.

**Reference:**

- *Competence, Training and Awareness Procedure*

## 7.4 Communication:

|                                                                                   |                                                                                              |  |              |                |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp; Industrial Services Company Ltd</b><br><b>IMS Manual</b> |  | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                              |  | Rev. No.     | 00             |
|                                                                                   |                                                                                              |  | Issue Date   | 31-03-2021     |

SMH has established and maintained a procedure for internal & external communications and consultation to ensure Quality of services, Environmental Aspects & Impacts, Occupational Health & Safety hazards and risks, and the IMS Management System.

**Reference:**

- *Communication, Participation and Consultation Procedure*

## 7.5 Documented Information:

SMH has established a procedure for controlling documents and records used in its IMS Management System. Control of documents ensures that the:

- Documents are approved for adequacy prior to release.
- Documents are reviewed, updated as necessary and re-approved.
- Documents are identified with current revision status.
- The relevant versions of documents are available at all locations where activities essential to the effective functioning of the quality operating system and process are performed.
- Documents remain legible, readily identifiable and retrievable.
- Applicable documents (regulations, notifications, etc.) of external origin are identified and their distribution controlled.
- Obsolete documents are removed from all points of issue or use or are otherwise controlled to prevent unintended use. Any obsolete documents retained for legal or knowledge preservation purposes are suitably identified.

Records are maintained and controlled to demonstrate conformance to requirements and effective operation of the Integrated Management System.

SMH has established and maintains IMS procedure for record identification, storage, retrieval, protection, retention time and disposition of records. In addition, MR has also maintained Back-up and recovery of Data especially Documents and Data related to IMS Management System.

**Reference:**

- *Control of documents and records Procedure*

## 8.0 Operations

### 8.1 Operations Planning and Control:

SMH perform the operational activities in conformance with the requirements of its customers and own quality system, planning of these service realization processes is performed which covers the Production, HR & Admin, Project Services, Procurement, and Sales.

Planning stipulates the mechanism for the identification of service requirements and its dissemination to relevant personnel for controlling the realization process. Planning identifies the resources (including equipment/machines) documentation requirement (Procedures/Process Flows/Forms) necessary for the fulfillment of realization processes. It also identifies the measuring and monitoring



|                                                                                   |                                                                                                  |              |                |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp; Industrial Services Company Ltd</b><br><br><b>IMS Manual</b> | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                                  | Rev. No.     | 00             |
|                                                                                   |                                                                                                  | Issue Date   | 31-03-2021     |

activities like inspection; verification throughout the process realization and the activities related to release and delivery activities. SMH maintains the records as the evidence of conformity to product realization.

SMH has identified those operations and activities that are associated with identified significant environmental aspect and Occupational health and Safety Risks where control measures need to be applied. SMH has planned these activities including maintenance, in order to ensure that they carried out under specified conditions by:

- Establishing and maintaining documented procedures to cover situations where their absence could lead to deviation from IMS policy and objectives
- Stipulating operating criteria in the procedure
- Establishing and maintaining procedures related to the identified significant environmental aspects / OH&S risks of materials, equipment and services purchased and / to be used by SMH and communicating relevant procedures and requirements to suppliers and contractors.
- Establishing and maintaining procedure for the design of workplace, process, installation, machinery, operating procedures and work organization, including their adaptation to human capabilities, in order to eliminate or reduce OH&S risk at their source.
- Consider Life Cycle perspective from design/raw materials till end-of-life treatment and final disposal of the services.
- Adapting work to workers.
- Establishing and maintaining procedure for the maintenance of workplace, installation, machinery, in order to eliminate or reduce OH&S risk at their source.
- Establishing and maintaining procedures for effective management of solid waste, effluent and air emissions

SMH ensure controls on planned changes by reviewing the consequences of unintended changes and taking action to mitigate any adverse effects, as necessary. It is demonstrated through Management of change (MOC) process.

SMH established MOC process for the implementation of temporary and permanent changes affecting OH&S performance including:

- New services or changes to existing services, including factory surroundings and inside organization, working condition, equipment and workforce.
- Changes to legal and other requirements.
- Changes in knowledge or information about hazards and OH&S risks.
- Developments in knowledge and technology

#### **Reference:**

- *Operational Process Controls & Maintenance*
- *Change Management Procedure*

|                                                                                   |                                                                                              |              |                |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp; Industrial Services Company Ltd</b><br><b>IMS Manual</b> | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                              | Rev. No.     | 00             |
|                                                                                   |                                                                                              | Issue Date   | 31-03-2021     |

## 8.2 Requirements and Review of Services:

SMH provides information related to their services and projects accomplished displayed through website and brochures. Enquiries has been handled by Contracts/Sales department while the Sales Manager negotiate and finalize the contracts, by resolving the conflicts with the client, if any. Feedback has been received from the Clients including but not limited to about the quality of service, Safety and Security arrangements and surrounding environment.

This is based on the system designed by SMH for measuring the needs of customers / clients and the applicable regulations specific to the Services delivered by SMH. The measurement of needs of customers / client includes:

- requirements specified by the customer / client, including the requirements for delivery and post-delivery activities
- requirements not stated by the customer / client but necessary for specific use or known and intended use
- statutory and regulatory requirements related to the Services
- any additional requirements determined by the SMH

Review Committee includes the process owners of Technical, Projects, Operations and QHSE, reviews the requirements related to the services provided. This review is conducted prior to the SMH commitment to supply services to the customer / client and ensures that:

- Services requirements are clearly defined.
- where the customer / client provides written statement of requirement, the order requirements are confirmed before acceptance.
- order requirements differing from those previously expressed, e.g. in a tender or quotation, are resolved.
- SMH has the ability to meet the customer / client requirements for the services provided.

The results of reviews and subsequent follow-up actions are recorded. Sales/Contracts Department ensures that relevant documentation is amended on changes in Services requirements and changed requirements are communicated to all relevant personnel.

SMH has defined and implements effective liaison with customers / client, with the aim of meeting customer / client requirements. SMH has defined communication requirements relating to enquiries and order handling, including amendments and Customer / client complaints & their feedback.

### Reference:

- Reviewed and Signed Contracts, Quotations, Customer Feedback*

## 8.3 Design and Development:

SMH is not involved in designing of any product hence this clause is not applicable.



|                                                                                   |                                                              |              |                |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------|--------------|----------------|
|  | Yes Yem Yech Manufacturing & Industrial Services Company Ltd | Document No. | SMH-IMS-MAN-01 |
|                                                                                   | IMS Manual                                                   | Rev. No.     | 00             |
|                                                                                   |                                                              | Issue Date   | 31-03-2021     |

## 8.4 Control of Externally Provided Services:

SMH Procurement is divided into following areas.

- General Purchase
- Products / Services Purchases (Related to Client)

Items / services related to office fall under general purchasing are purchased through Admin department like Stationary items, General Electrical items, Computers and computer accessories & parts, Office maintenance.

Product / Services related to client are purchased through contract / subcontract/ Purchase Order from approved supplier.

During the receipt of materials, the warehouse Incharge verify the quantity of material against the delivery note and maintain the records. Quality Incharge inspect the quality of the received material against the specifications mentioned in the Purchase Order.

Based on the client requirement, self-inspection / 3rd party inspection performed.

In case of 3rd party inspection, SMH informs inspection agency and invite them for inspection. In case material is accepted, SMH takes report from 3rd party and submits this report to client along with delivery note.

In case the material is rejected, Warehouse Department segregates the material in the Receiving section and identifies as REJECTED MATERIALS. Warehouse Department prepares the Non-Conformance Product Report (NCR) and supplier for Corrections and Corrective actions.

The nonconforming material is either,

- Rejected and replaced
- Accepted as it is basis

The settlement is recorded on the Non-Conformance Product Report (NCR) by Warehouse Department. In case of replacement, the supplier makes arrangements for collecting the nonconforming material. The aim of evaluation is to ensure that the supplier has the capability to consistently supply products and services that fully meet the requirements of the company.

Company's existing suppliers, who have been dealing with company for more than six months, are evaluated on the basis of their previous performance history. Warehouse manager / MR are responsible for evaluation of existing suppliers. The results of evaluation are recorded on the Supplier Evaluation Form.

The Supplier Evaluation forms are reviewed and approved by Operations/Projects manager.

After approval, the suppliers are registered in the list of approved suppliers by MR. Evaluation record and list of approved suppliers are maintained by Warehouse manager / MR.

New suppliers are initially selected based on the Supplier Selection Criteria which includes but not limited to Market Reputation, Experience and reference of other clients, Credit Facilities and Price.

List of approved suppliers are maintained by MR / Warehouse Incharge

The suppliers' records are compiled and analyzed annually by Warehouse Incharge.

|                                                                                   |                                                                                              |  |              |                |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp; Industrial Services Company Ltd</b><br><b>IMS Manual</b> |  | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                              |  | Rev. No.     | 00             |
|                                                                                   |                                                                                              |  | Issue Date   | 31-03-2021     |

These analyses are reviewed in MRM. Based on this analysis, counseling and training is given to the suppliers for improvements, if required.

#### Reference:

- Purchase Orders, Quotations, MR, Supplier Evaluation, Approved Vendors

### 8.5 Control of Service Provision:

SMH operates all its processes under controlled conditions, which includes:

- (a) Issuing Work Orders/ Service Orders that defines the characteristics of the service to be provided/activity to be performed and the results to be achieved;
- (b) SMH ensures the availability and use of suitable monitoring and measuring resources;
- (c) SMH implements the monitoring and measuring activities at appropriate stages through Inspection performed by QC department to verify that criteria for control of process/outputs and acceptance criteria for services been met;
- (d) SMH established suitable infrastructure and work environment for the operation of the process;
- (e) SMH assigns competent persons for the execution of service operations;
- (f) SMH performs validation and periodic validation for those process required validation, where the resultant output cannot be verified by subsequent measuring or measurement;
- (g) SMH implements the actions to prevent human error;
- (h) SMH implemented the release, delivery and post-delivery activities.

SMH identifies the Service Order/ Work Order, Project Reference Number as Unique Identification for traceability.

The customers' information about material or drawings (provided by customer) is treated as customer property. If any customer property is damaged or otherwise found to be unsuitable, this shall be reported by Project Manager to customer and a record of action taken is maintained and communicated to customer as per customer communication process.

SMH ensures the final output had been preserved through proper packing, storage, transportation and required protection.

SMH shall meet the requirements of post delivery activities after the service provision as per agreed contractual conditions and legal requirements. While defining the post delivery activities, SMH considers the potential undesired consequences associated with the services provided.

SMH review and control the changes to service provision by maintaining the appropriate document amendment describing the results of the review of changes, the person authorizing the change, and any necessary actions arising from the review.

SMH established, implemented and maintained the process for the elimination of hazards and reduce OH&S Risks through hierarchy of controls.

#### Reference:



|                                                                                   |                                                                                                  |              |                |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp; Industrial Services Company Ltd</b><br><br><b>IMS Manual</b> | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                                  | Rev. No.     | 00             |
|                                                                                   |                                                                                                  | Issue Date   | 31-03-2021     |

- *Service Orders/ Work Order Records, Process Control Documents, Operation and Maintenance Procedures/ Work Instructions, HIRAC procedure*

## 8.6 Release of Services:

SMH implement in-process inspections and Final Inspections during service provisions to verify that the service requirements have been met.

The final release of services to be performed after fulfilling the planned arrangements/acceptance criteria or witnessed by the client as required.

SMH maintains the records of the final release of services including the evidence of conformity with the acceptance criteria and the traceability to the person authorizing the release.

### *Reference:*

- *In-process Inspection Reports, Final Inspection Reports, Job Completion Certificate*

## 8.7 Control of Nonconforming Outputs:

SMH ensures that the outputs not conforming to their requirements are identified and controlled to prevent their unintended use or delivery by segregating/quarantine the non-conforming outputs. If there occurs a trend of nonconforming outputs, then Non-Conforming Report will be raised by identifying the appropriate root cause and corrective action.

SMH deals with non-conforming outputs in one or more of the following ways:

- Correction;
- Segregation/Containment;
- Informing the customer;
- Obtaining authorization for acceptance under concession.

SMH re-verify the non-conforming outputs after implementing the required corrections.

SMH retain the records on the description of nonconformity and action taken, concessions obtained and identify the authority deciding the action in respect of the non-conformity.

### *Reference:*

*Non-conformity Report/ Concession Report/ Rework Orders*

## 8.8 Emergency Preparedness and Response:

SMH has implemented and maintained a procedure to identify potential for and respond to accidents and emergency situations, and for preventing and mitigating the environmental impacts, and



|                                                                                   |                                                                                              |              |                |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp; Industrial Services Company Ltd</b><br><b>IMS Manual</b> | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                              | Rev. No.     | 00             |
|                                                                                   |                                                                                              | Issue Date   | 31-03-2021     |

occupational health & safety risks that may be associated with them. Emergency methods are reviewed by the Management Representative and after the occurrence of accidents or emergency situations

**Reference:**

*Emergency Preparedness and Response Procedure*

## 8.8 Contractor Management:

SMH coordinates its procurement process with the contractors to identify hazards and to access and control OH&S risks arising from:

- (a) Contractors' activities and operations that impact organization;
  - (b) Organization activities and operations that impact contractors' workers;
  - (c) Contractors' activities and operations that impact other interested parties in the workplace;
- SMH ensures the requirement of OH&S management system are met by contractors and their workers. SMH purchase process defines and applies OH&S criteria for the selection of contractors. SMH ensures that outsourced functions and process are controlled and consistent with legal and other requirements.

**Reference:**

*Contractor Management Controls*

## 9.0 Performance Evaluation:

### 9.1.1 Monitoring, Measurement, Analysis and Evaluation:

SMH has planned and implemented monitoring, measurement, analysis and improvement process needed,

- a) To demonstrate conformity of the services
- b) To ensure conformity of the IMS Management System
- c) To continually improve the effectiveness of the IMS Management System

It includes determination of applicable methods, including statistical techniques and the extent of their use.

### 9.1.2 Customer Satisfaction:

SMH collects the customer satisfaction / dissatisfaction data form two sources.

- Customer Feedback
- Customer complaints

|                                                                                   |                                                                                              |  |              |                |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp; Industrial Services Company Ltd</b><br><b>IMS Manual</b> |  | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                              |  | Rev. No.     | 00             |
|                                                                                   |                                                                                              |  | Issue Date   | 31-03-2021     |

MR Sends feedback format to customer via email or along shipment which is ever is practical to the customer response regarding shipped product on yearly bases.

MR receives customer feedback and MR performs analysis of all received customer feedback to check the customer satisfaction level. Results of these analyses are then discussed in Management review meetings

Project Department is responsible for handling the customer complaints. The complaint may be related to, but is not limited to, late delivery, Service quality not as per requirements or any other non-conforming services.

#### *Reference:*

*Customer Satisfaction Survey, Corrective Action Report to Customer Complaints*

### 9.1.3 Analysis and Evaluation:

SMH collects and analyzes appropriate data to evaluate the suitability and effectiveness of the IMS Management System and to identify areas for continual improvement. This includes data generated by measuring and monitoring activities and other relevant sources. Decisions are based on facts by using appropriate statistical techniques. The analysis of data provides information on:

- Conformance to customer / client requirements;
- Characteristics of processes and their trends;
- Supplier Performance;
- Effectiveness of actions taken to address risks and opportunities;
- Legal and other compliance with respect to EMS & OHS;
- Accidents/ incidents investigation records;
- Internal audit results;
- Need for IMS improvement.

### 9.1.4 Evaluation of Compliance:

SMH established, implemented and maintain a procedure for evaluating compliance with legal requirements and other requirements and fulfilment of its compliance obligations.

SMH review the compliance evaluation on quarterly basis and take appropriate corrective action, if any areas not fulfilling the requirement. SMH maintain knowledge and understanding of its compliance status with legal requirement and other requirement and understanding its compliance status. SMH maintain appropriate records to demonstrate the evidence of compliance evaluation result(s).

#### *Reference:*

*Legal Requirements, Compliance Obligation and Evaluation Procedure*



|                                                                                   |                                                                                                      |              |                |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp;<br/>Industrial Services Company Ltd</b><br><br><b>IMS Manual</b> | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                                      | Rev. No.     | 00             |
|                                                                                   |                                                                                                      | Issue Date   | 31-03-2021     |

## 9.2 Internal Audit:

Internal Audits are conducted at least once in a year to ensure that the IMS Management System has been properly implemented and maintained and are in compliance with ISO 9001:2018, ISO 45001:2018 and ISO 14001:2015. The results of these audits are provided to IMS Management Committee. Audits are performed according to a schedule, considering importance of a process/activity, changes affecting the organization and the results of previous audits. SMH ensures that all auditors are competent and audit records are kept with the MR. The responsibilities and requirements for planning and conducting audits, for reporting results and maintaining records are defined in documented procedures.

### Reference:

*Internal Audit Procedure*

## 9.3 Management Review:

Managing Director or his assigned delegate reviews all elements of the IMS Management system annually to ensure its continuing suitability, adequacy and effectiveness for continual improvement. The minutes of Management Review Meeting records maintained by MR.

### Reference:

*Management Review Procedure*

## 10.0 Improvement:

### 10.1 General:

SMH continually strives to improve the effectiveness of IMS Management System through the use of IMS Policy, IMS Objectives, Audit Results, Analysis of Data, Corrective actions, Risk Management and Management Review. The objectives are up-graded gradually on routine basis for improving performance of different departments.

### 10.2 Incident, Non-conformity and Corrective Action:

SMH implements action to eliminate the causes of nonconformities in order to prevent recurrence. The extent of corrective actions taken depends on the impact of the problems encountered. The procedure for the corrective action process includes:

- Identification and review of nonconformities (including customer complaints).
- Determination of causes of nonconformities.
- Evaluation of the need for actions to ensure that nonconformity do not re-occur.



|                                                                                   |                                                                                                      |              |                |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|--------------|----------------|
|  | <b>Yes Yem Yech Manufacturing &amp;<br/>Industrial Services Company Ltd</b><br><br><b>IMS Manual</b> | Document No. | SMH-IMS-MAN-01 |
|                                                                                   |                                                                                                      | Rev. No.     | 00             |
|                                                                                   |                                                                                                      | Issue Date   | 31-03-2021     |

- d) Determination and Implementation of any actions necessary to ensure that nonconformities do not re-occur.
- e) Recording results of actions taken.
- f) Follow-up to ensure corrective action taken is effective and recorded.

SMH has maintained a procedure for defining responsibility and authority for handling and investigating non-conformances in relation with service nonconformity, Accidents / Incidents investigation, for taking action to mitigate safety risks and environmental impacts.

**Reference:**

*Nonconformity and Corrective Action Procedure, Incident Investigation Reports*

### 10.3 Continual Improvement:

SMH considers the results of analysis and evaluation, and the outputs from management review to determine the needs or opportunities for continual improvement.

| TECHNICAL DOCUMENTATION FRONT SHEET                                                 |           |                  |                                                                                     |                                                                                     |                                                                                     |                                |           |          |     |
|-------------------------------------------------------------------------------------|-----------|------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------|-----------|----------|-----|
|    |           |                  | <b>SMH SAFETY MANAGEMENT<br/>SYSTEM</b>                                             |                                                                                     |                                                                                     | May 2020                       |           |          |     |
| <b>SMH INDUSTRIAL SERVICES</b><br><br><b>PROJECT SPECIFIC SAFETY PLAN</b>           |           |                  |                                                                                     |                                                                                     |                                                                                     |                                |           |          |     |
|                                                                                     |           |                  |                                                                                     |                                                                                     |                                                                                     |                                |           |          |     |
|                                                                                     |           |                  |                                                                                     |                                                                                     |                                                                                     |                                |           |          |     |
|                                                                                     |           |                  |                                                                                     |                                                                                     |                                                                                     |                                |           |          |     |
|                                                                                     |           |                  |                                                                                     |                                                                                     |                                                                                     |                                |           |          |     |
|                                                                                     |           |                  |                                                                                     |                                                                                     |                                                                                     |                                |           |          |     |
| 0                                                                                   | 05 / 2020 | Management       |  |  |  |                                |           |          |     |
| Rev                                                                                 | Date      | Reason for Issue | Prepared                                                                            | Reviewed                                                                            | Approved                                                                            | Reviewed                       | Reviewed  | Approved |     |
| <b>Notes:</b>                                                                       |           |                  | Originator                                                                          | Director General                                                                    | Managing Director                                                                   |                                |           |          |     |
|                                                                                     |           |                  | SMH                                                                                 |                                                                                     | Client                                                                              |                                |           |          |     |
|                                                                                     |           |                  | Category                                                                            |                                                                                     | Code                                                                                | Description                    |           |          |     |
|                                                                                     |           |                  | Discipline                                                                          |                                                                                     | EHS                                                                                 | Environment, Health and Safety |           |          |     |
| Document No.                                                                        |           |                  | Code                                                                                |                                                                                     | SWP                                                                                 | Safe Working Practice          |           |          |     |
|                                                                                     |           |                  | Document Type                                                                       |                                                                                     | PLN                                                                                 | Plan                           |           |          |     |
|                                                                                     |           |                  |                                                                                     |                                                                                     |                                                                                     |                                |           |          |     |
| SMH-HSE-SWP-002-SA-PSS -Plan                                                        |           |                  |                                                                                     |                                                                                     |                                                                                     |                                |           |          |     |
| This document shall not be reproduced without permission of SMH Industrial Services |           |                  | Company                                                                             | Discipline                                                                          | Code                                                                                | No.                            | Doc. Type | Activity | Rev |
|                                                                                     |           |                  | SMH                                                                                 | EHS                                                                                 | SWP                                                                                 | 002                            | PLN       | EHS      | 0   |

## TABLE OF CONTENTS

### 1.0 INTRODUCTION:

### 2.0 PROJECT EXECUTIVE SUMMARY:

### 3.0 SMH EHS POLICY.

### 4.0 PROJECT EHS STRATEGIC OBJECTIVES

- 4.1 Objectives and Targets
- 4.2 Life Saving Rules (LSR)

### 5.0 Safe Working Practices

#### 5.1 Confined space / Confined Space Entry

- 5.1.1 Pre-entry Precautions
- 5.1.2 Precautions during Entry
- 5.1.3 Emergency Situations in CS

#### 5.2 Working at height

#### 5.3 Control of Hazardous energy (LOTO)

#### 5.4 Hot Work

- 5.4.1 Firewatchers

#### 5.5 Manual Handling

- 5.5.1 Appraisal of Manual Handling Activities

### 5.6 TRAINING AND AWARENESS

#### 5.7 Portable Hand and Power Tools

#### 5.8 Use of PPE

#### 5.9 Crane Lifting and Rigging

- 5.9.1 Competent Persons for Lifting Operations
- 5.9.2 Crane Operator
- 5.9.3 Banksman
- 5.9.4 Rigger
- 5.9.5 Lifting Plans
- 5.10 Work Permit System / Permit to Work

### 6.0 Project EHS Requirements & Expectations

### 7.0 ORGANISATION CHART

### 8.0 Site Safety Rules

- 8.1 Entry / Exit to Project Premises.
- 8.2 General Site Safety Rules:
- 8.3 Kick Off Meeting / Pre-Alignment Meeting Prior To Start Of Work
- 8.4 Pre-Employment & Premedical Check
- 8.5 Screening and Induction Of Workmen
- 8.6 Inspection Of Equipment
- 8.7 General
- 8.8 Lifting Appliances
- 8.9 Pressure Equipment
- 8.10 Staging Equipment
- 8.11 Chemicals

### 9.0 Hazard Identification and Risk Assessment

- 9.1 Job Safety Analysis
- 9.2 Risk Assessment
- 9.3 Risk Matrix

### 10.0 Personal Protective Equipment (PPE)

### 11.0 Training and Awareness

- 11.1 Safety notice board:



## **12.0 Management of EHS Reward & Reprimand**

- 12.1 Motivational Schemes
- 12.2 Safety Infringement

## **13.0 Emergency Preparedness & Response**

- 13.1 Emergency Response Plan for Project
- 13.2 Environment and Waste Management

## **14.0 Performance Evaluation & Monitoring**

## **15.0 Incident Reporting, Investigation and Analysis**

- 15.1 Incident Investigation
- 15.2 Accident Not Involving Injury To Personnel
- 15.3 Accidents Involving Injury to Personnel
- 15.4 Accident involving serious injury likely to be fatal to personnel

## **16.0 Protection of Site**

## **17.0 Performance Evaluation and Reporting**

- 17.1 Inspection and Safety Auditing
- 17.2 Weekly Safety Walk-around

## **18.0 Safety Meetings**

- 18.1 Tool box talks
- 18.2 Mass Toolbox talks:
- 18.3 The Weekly Meeting:
- 18.4 The Monthly Meeting:

## **19.0 First Aid**

## **20.0 Roles & Responsibilities**

- 20.1 Organization / Roles and Responsibilities
- 20.2 Senior Management
- 20.3 Senior Management Responsible for Health and Safety
- 20.4 Project Managers
- 20.5 Safety Manager
- 20.6 Managers/Heads of Department
- 20.7 Technical and Electrical Engineering Manager
- 20.9 All Employees
- 20.10 EHS Supervisor
- 20.11 Project Engineers
- 20.12 Safety Officers

## **21.0 Fire Fighting Equipment**

## **22.0 INDUSTRIAL HYGIENE**

## **23.0 Housekeeping / Waste Management**

## **24.0 OTHER ATTACHMENTS**

## 1.0 INTRODUCTION:

SMH industrial services co., ltd is a rotating equipment specialist with broad experience in operations and maintenance, project management and industrial support services. SMH started with humble beginning and has grown to become an industry partner with clients, specifically in the oil & gas and petrochemicals sectors. SMH has been providing cost Effective solutions to client's requirements delivering timely with the highest standards of quality and strict adherence to the best safety practices.

SMH's principal asset is a team of technical experts whose undertaking is a concerted effort to ensure our clients total satisfaction

The company is privileged to be of service to the renowned industrial giants i.e. SABIC, Saudi Chevron, petrochemical conversion company, TASNEE, SATROP and various international companies in Oil & Gas, Petrochemical, Fertilizers and Metal sector. SMH aims to be a good corporate citizen by encouraging local workforce where ever possible.

We inspire partnership, transparency and reliability stretching beyond the boundaries of a client-contractor relationship. Our success in the business is mainly due to strict adherence to our ultimate aim.

Assurance of health and safety of people,

Preservation of the environment,

Excellence in service . . .

## 2.0 PROJECT EXECUTIVE SUMMARY:

The purpose of this SMH Project Specific Safety Plan (PSSP) is to demonstrate the SMH EHS consistency and commitment towards the clearly identified Project EHS requirements and SMH achievements.

The project EHS requirements were incorporated in the SMH PSSP for the project duration and essentially addressed the following:

- To manage and comply with Project EHS requirements to achieve set EHS goals.
- To ensure that the Project daily activities are properly planned to avoid delays in completing the turnaround and shutdown projects.
- To provide the required resources to safely manage the said scope of work according the required Project EHS requirements.
- To ensure that all SMH employees are sufficiently informed of their EHS duties and EHS awareness.

## 3.0 SMH EHS POLICY.



شركة يس يمش للخدمات الصناعية المحدودة  
**Yes Yem Yech Industrial Services Co. Ltd.**

C.R. No.: 2055011199

س.ت. ٢٠٥٥-١١١٩٩

رأس المال المدفوع: ١,٠٠٠,٠٠٠ ريال سعودي S.R.L 1,000,000.00

إنشاء وتشغيل وصيانة وتقديم الدعم الفني للمنشآت الصناعية  
Operation - Maintenance - Industrial Construction & Support Services

SMH – Industrial Services

### Health, Safety and Environmental Policy

SMH recognizes its legal, moral and financial responsibility and accountability to conduct its business responsibly to preserve and protect the environment and to be vigilant in ensuring the health and safety of SMH employees and all SMH stakeholders. SMH consider and recognizes the protection of Health and Safety of employees and the Environment as a corporate responsibility and are committed to pursuing the highest standards of prevention of occupational illnesses, injuries and environmental degradation during SMH project execution.

#### SMH Commitments

To achieve this, SMH is committed to make the following commitments and requires all its employees to act accordingly:

- Take ownership of Health, Safety and Environmental compliance and performance excellence as an organizational core value by ensuring compliance with all client and National HSE requirements, regulations and standards applicable to SMH business.
- Provide appropriate resources to develop, implement and maintain the approved HSE Management System to identify hazards, eliminate or appropriately manage HSE risks, to protect the environment, and to prevent injuries, illness and property damage.
- Ensure our employees proactively subscribe to the SMH HSE plan, comply with all applicable laws, regulations and standards as well as our own policies; and empower them to eliminate or appropriately manage activities that pose a threat to people and/or the environment.
- Maintain a perpetual HSE system to monitor, audit, review, and continuously improve our performance and the effectiveness of our HSE Management System and compliance with client HSE requirements.

The SMH HSE Policy shall be afforded active dissemination and promotion to ensure the highest possible level of exposure to promote proactive HSE awareness and assurance amongst all the stakeholders.

Fahad Eid Al – Gahtani

President

SMH Industrial Services Co., Ltd



Page 1 of 1



## 4.0 PROJECT EHS STRATEGIC OBJECTIVES

### 4.1 Objectives and Targets

The main HSE targets defined for all Projects are:

- Zero harm to people.
- Zero harm to environment.
- Zero damage to property.
- Reporting of any incidents, accidents and near misses.

Targets are mainly leaned towards the quality of reporting rather than the quantity.

SMH focuses its effort on promoting the importance on efficient reporting as well as involvement of management during any incident investigations.

### 4.2 Life Saving Rules (LSR)

SMH's 'Life-Saving Rules' are a line of defense in protecting our people, whom we regard as our most valuable asset, which also extends throughout subcontractor personnel working alongside us. These rules are not intended to 'stand-alone!', as they can only be effective if they form an integral part of our everyday workplace behaviors & procedures, rejecting the silent enemy of complacency. Life Saving Rules are formed in the following order:

| CORE RULES                                                                                                                                     | VEHICLE OPERATIONS                                                                                                                            | PERSONAL RESPONSIBILITIES                                                                                                                                                                  | OPERATION SPECIFIC                                                                                                                                                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Moving and / or Energized Equipment</li> <li>• Working at Height</li> <li>• Confined Space</li> </ul> | <ul style="list-style-type: none"> <li>• Seat Belts</li> <li>• Speed Limit</li> <li>• Cell Phone Use</li> <li>• Journey Management</li> </ul> | <ul style="list-style-type: none"> <li>• Awareness of the Safety of yourself and others around you.</li> <li>• Full and proper PPE worn</li> <li>• Smoking in designated places</li> </ul> | <ul style="list-style-type: none"> <li>• Permit To Work</li> <li>• Gas Testing</li> <li>• Isolations</li> <li>• Dropped Objects</li> <li>• Suspended Loads</li> <li>• Lifting Plans</li> <li>• Safety Critical Equipment</li> <li>• Housekeeping</li> </ul> |

## 5.0 Safe Working Practices

### 5.1 Confined space

The definition of a Confined Space is: any vessel, enclosure or compartment large enough to take a person where the atmosphere may be dangerous or incompatible because of toxic gases, other substances and/or oxygen deficiency.

A Confined Space is any enclosed or partially enclosed space which:

- Is at atmospheric pressure during occupancy;
- Is large enough for any person to bodily enter it and perform the assigned task;
- Has limited / restricted means of entry / exit;

- Is unventilated or poorly ventilated;
- Is not intended or designed primarily as a place of work (for continuous occupancy);
- Any compartment, space or area where the atmosphere may or has become unsafe due to oxygen deficiency, toxic or narcotic vapors, or flammable and/or explosive atmospheres that can be created by the presence of flammable vapors or excess oxygen (oxygen enrichment).

Examples of Confined Spaces:

- tanks (including the open-topped tanks such as pits or degreasers)
- separators
- boilers
- large pipelines
- sewers
- shafts
- ducts
- closed and unventilated rooms
- Other poorly ventilated area.

## 5.1.1 Pre-entry Precautions

Prior to any Confined Space Entry, the space itself shall have been made safe to enter. This will be achieved by implementation of all mitigation measures and controls.

Entry into a confined space is subject to a Risk Assessment / JSA.

This will confirm the need to enter the space, procedures and controls required and any special equipment or services requirements.

Prior to Entry into a CS, and PTW issuance, the following items shall be strictly adhered to:

- All relevant Lock out Tag out isolation actions have been performed and verified.
- The atmosphere inside the enclosed space is gas tested and found safe for entry.

Permissible levels for safe entry are:

- Oxygen: between 19.5% and 23.5% (normal = 20.8)
- Flammable / explosive gases: less than 1% LFL / LEL
- CO: 10 ppm (ref. – LTEL, EH40/2005)

Initial gas testing shall be carried out FROM THE OUTSIDE OF THE CONFINED SPACE.

- JSA has been completed and discussed between all involved in the CSE task.
- Stand-by man (Hole Watcher) is at the entry point, fully conversant and ready with an entry log, communication means and emergency call information and task Supervisor's name and contact details.
- Two way communications is available.
- Intrinsically safe lighting is available.
- Rescue team has been informed of the entry and rescue equipment (Life line, BA sets, rescue harnesses, etc.) is readily available.

## 5.1.2 Precautions during Entry

During Entry into Enclosed or Confined Space, the following precautions must be taken:

- Ventilation should continue while the space is occupied and during breaks;
- The atmosphere should be tested periodically;
- If a hazardous situation develops, or the ventilation or illumination fails, the space should be evacuated immediately;

- If any person in the space feels uncomfortable in any way, he should give the prearranged signal to the attendant and immediately leave the space. Any other personnel within the space should also leave;
- If the Standby Man at the entrance sees any signs that personnel within the space are apparently becoming adversely affected by the atmosphere, he should give the recall signal and summon assistance. Never, under any circumstances, shall he enter the confined space whilst fulfilling the role as a Standby Man;
- Standby Man shall be in possession of a hand held radio or another form of communication to maintain contact with the entrants and task Supervisor.
- Standby Man must make sure that access / egress is always free from obstacles, and that ladders/ scaffolding structures are adequate.

## 5.1.3 Emergency Situations in CS

If an emergency in the Confined Space occurs during the operation or if the contact is lost between the Standby Man and the personnel inside confined space, the Standby Man shall:

- Immediately raise the alarm with the available systems of communication;
- Not enter and wait for assistance and brief emergency team on arrival.

When any alarm from stand by man is raised, emergency actions must be followed, together with established Plant Emergency Procedures.

### NOTE:

In the event of an emergency situation arising within a confined space, the general alarm must be activated immediately.

In the event of a general alarm sounding, confined spaces shall be evacuated immediately and personnel are to proceed to the muster station.

The CLIENT Control Room must immediately be notified of the emergency and all relevant details must be conveyed to them.

## 5.2 Working at height

Work at height is essentially regarded as work being carried out at an elevated position of 1.8 meters (6 feet) on any structure, including scaffolds, MEWP, ladders, on the back of flatbed trucks, etc.

In all circumstances, primary fall protection (guard rails around open edges) must be considered and implemented when possible.

The following should be taken into consideration when work at height needs to take place:

- All work at height is properly planned, organized and subject to a JSA.
- Those involved in work at height are competent and fully conversant in using fall protection PPE.
- The risks from work at height are assessed and appropriate work equipment is selected and used.
- The work area is adequately illuminated.
- Equipment for work at height is properly inspected and maintained.

Personnel, who are to undertake a task which is at height, must be wearing a certified safety harness with two lanyards to ensure 100% tie off at all times. Lanyards must be secured to a suitable anchorage point, e.g. structural beams, certified pad-eyes, etc. At no time should cable trays, facilities piping etc. be used as an anchorage point.



If no suitable anchorage point is available for harness lanyards, alternatives such as lifelines or fall arrestors must be considered.

Personnel working on MEWP's are also subject to tie off when the cage is at height.

Personnel working on scaffold platforms need not tie off in the event that the scaffold is complete with guard rails and toe boards, and has been inspected and "green tagged". However, should a person have to extend beyond the guard rail, tie off then becomes mandatory.

Scaffold erectors are to remain tied off during the erection and dismantling of a scaffold platform.

## 5.3 Control of Hazardous energy (LOTO)

Control of hazardous energy (isolations) is a method of preventing the passage of energy through connecting lines and the disconnection of all forms of motive power, liquids and

Gases in order to allow safe access permitting intrusive equipment maintenance / repair / cleaning / adjustment / inspection.

***No work shall be carried out by SMH until all isolations have been completed and verified by Client, who has the sole responsibility to Lock out, Tag out and verify all systems to be worked on.***

Only the person who carries out the LOTO exercise may give the go ahead for work to commence.

No lock out or tag out device may be tampered with by any means by personnel working on the equipment.

All personnel working for SMH on the project have been informed of the process and shall comply.

## 5.4 Hot Work

Hot Work is considered any work that implies a risk for fire and explosion or any other fire or spark-producing operation.

The following activities to be considered as Hot Work:

- Welding
- Grinding
- Flame-cutting (burning) and Gouging.

No hot work shall be carried out on site, unless a hot work permit has been raised and approved by Client, and all the controls stipulated have been put in place.

All Persons carrying out the Hot Works are responsible for operating the relevant equipment and performing the activities in a safe and proper manner, and in accordance with the requirements of the PTW. They shall also ensure that they are fully aware of all the hazards involved in the specific task and carry out all the appropriate safety precautions.

### 5.4.1 Firewatchers

Must be available at hot work sites with appropriate fire extinguishing mediums readily available.

SMH shall supply trained and competent Firewatcher staff for a Project. They shall ensure that the area is free of combustible materials and that the fire extinguishing medium required, is on site and ready for use. Firewatcher staff shall remain at the hot work site for at least 30 minutes after hot work has been completed, in order to ensure that the area is safe and that no fire is likely to occur.

## 5.5 Manual Handling

Any manual handling activity which involved a risk of injury shall be avoided so far as is reasonably practical. Consequently – the first question to ask is whether the activity can be eliminated. If not, consider whether the activity can be automated or mechanized.

## 5.5.1 Appraisal of Manual Handling Activities

There is a requirement for an initial appraisal for all manual handling activities. Any job, activity or team effort which involves one of more of the activities listed below shall be appraised.

- Lifting
- Lowering
- Carrying
- Pushing
- Pulling
- Dropping

The initial appraisal shall highlight the activities and necessary remedial actions in response to:

- What is the risk of injury?
- What can be eliminated from the activity?
- What can be automated?
- What can be mechanized?

All other manual handling activities need to be assessed subsequently in more detail to identify remedial measures. Where the risk can be avoided by elimination, automation or mechanization the remedial measures shall be specified and implementation recorded.

Health, safety and productivity will be optimized when an ergonomic approach is used upon application to the manual handling activity.

Application of the four points below shall be used to ensure this approach;

- Task
- Load(s)
- Working environment
- Individual capability

Particular attention shall be given to the provision of mechanical assistance where this is reasonably practicable. This shall involve the use of handling aids and, whilst and element of manual handling is retained and bodily force are applied more efficiently, thereby reducing the risk of injury.

Knowledge and training alone will not ensure safe manual handling but are an important aspect of a safe system of work. A suitable and sufficient training program shall address the following and be delivered to each employee involved into manual handling activities:

- How potentially hazardous loads may be recognized.
- How to deal with unfamiliar loads
- Good handling techniques including the correct use of manual handling aids
- The correct use of personal protective equipment (PPE)
- Features of the working environment that contribute to safety
- The importance of good house keeping
- Factors affecting individual capacity

Employees shall also be trained to recognize loads whose weight in combination with their shape and circumstances in which they are handling, might cause injury.

Where reasonably practical, employees involved in the manual handling of loads shall be provided with precise information about;

- The weight of each load
- The heaviest side of any load whose center of gravity is not positioned centrally
- Where this is not reasonably practical, general advice shall be given about;
- The range of loads to be handled
- How to handle the load whose weight is not evenly distributed.
- Unfamiliar loads shall always be treated with caution. The weight of an unknown load can be gauged by attempting to raise one end of the load. Force shall be always applied gradually until either undue strain is felt in which case the task shall be reconsidered. Alternatively the weight of the load can be gauged by rocking it from side to side before attempting to lift it.

## 5.6 TRAINING AND AWARENESS

SMH shall arrange for EHS training of all workmen / supervising personnel on EHS through the client EHS Lead before starting any work at Site.

The training shall cover the following topics:

- Site hazards,
- Precautions,
- Communication systems
- Emergency response procedures
- PPE minimum requirements

Training will be imparted on critical activities such as:

- Working at Height
- Hot works
- Confined space
- Demolition of structure
- Scaffolding
- Shifting of material by crane
- Erection & installation of heavy equipment.

Training records will be maintained by SMH EHS Team. The record should include the following:

Names of those trained

- Course content
- Date and time
- The names of the instructors.

The EHS Lead of SMH will periodically review the training quality and records to verify that training is being conducted which meets the criteria.

Client should provide EHS Training sticker on the helmet to all SMH employees who under goes the training and will keep register for the employee's record for training, medical check-up, among other things.

## 5.7 Portable Hand and Power Tools

Employees who use hand and power tools and are exposed to the hazards of falling, flying, abrasive, and splashing objects, or to harmful dusts, fumes, mists, vapors, or gases must be provided with the appropriate personal protective equipment. All electrical connections for these tools must be suitable for the type of tool and the working conditions (wet, dusty, flammable vapors).

Employees must be trained in the proper use of all tools they use, and be able to recognize the hazards associated with the different types of tools and the safety precautions necessary.

Five basic safety rules can help prevent hazards associated with the use of hand and power tools:

- Keep all tools in good condition with regular maintenance.
- Use the right tool for the job.
- Examine each tool for damage before use and do not use damaged tools.
- Operate tools according to the manufacturers' instructions.
- Provide and use properly the right personal protective equipment.

Hand tools and associated implements will be used only for the specific purpose they were designed.

Sharp-edged and sharp-pointed tools will not be:

- Thrown from person to person.
- Used in close proximity to others (e.g. a slip of the tool may injure someone not involved in the task).
- Used in close proximity to moving machinery without proper precautions being considered.
- Left lying around where personnel have to pass (especially on elevated work platforms where they might fall on persons below).

Additional precautions that apply to hand tools are:

- Only insulated or non-conductive tools will be used on or near live electrical equipment, if there is a risk of electrical shock.
- Open jawed wrenches will be pulled, not pushed.
- Lengths of pipe, or other makeshift means, will not be used over spanners or wrench handles to extend the leverage.
- Shims or other material will not be used with open-ended spanners or wrenches to make them fit.
- Files will be fitted with proper, secure handles.
- Chisels being driven with hammers will be held with tongs and not by hand.

Power tools must be fitted with guards and safety switches; they are extremely hazardous when used improperly. The types of power tools are determined by their power source: electric, pneumatic, liquid fuel, hydraulic, and powder-actuated.

To prevent hazards associated with the use of power tools, workers should observe the following general precautions:

- Never carry a tool by the cord or hose.
- Never yank the cord or the hose to disconnect it from the receptacle.
- Keep cords and hoses away from heat, oil, and sharp edges.
- Disconnect tools when not using them, before servicing and cleaning them, and when changing accessories such as blades, bits, and cutters.
- Keep all people not involved with the work at a safe distance from the work area.
- Secure work with clamps or a vice, freeing both hands to operate the tool.
- Avoid accidental starting. Do not hold fingers on the switch button while carrying a plugged-in tool.
- Maintain tools with care; keep them sharp and clean for best performance.
- Follow instructions in the user's manual for lubricating and changing accessories.
- Be sure to keep good footing and maintain good balance when operating power tools.
- Wear proper PPE for the task. Loose clothing, ties, or jewelry can become caught in moving parts.



- Remove all damaged portable electric tools from use and tag them: “Do Not Use.” And return to the store.
- All the hand / power, lifting, rigging and hydraulic tools shall be inspected by a competent 3<sup>rd</sup> party annually.

All equipment used for carrying out work shall be rendered safe. The Portable tools includes: welding Sets

- Gas cutting sets
- Grinders
- Drilling M/c
- Ladders
- Cranes, etc.

It is obligatory on SMH part to verify the quality & safety aspects of such plant, machinery or tools so that no injury or accident will occur when used in the expected manner.

It is the duty of the contractor to ensure that regular inspection of the tools used at site is done in addition to the checks just before use and ensure that they are in good working condition as per Good Engineering Practices.

SMH shall also meet all statutory requirement related to specific equipment like

- Hoist,
- Tackles
- Lifting devices

In terms of getting them periodically inspected and certified by a competent agency as specified by the relevant act. In addition to this, any other statutory requirement specific to any machinery shall also be satisfied. All the tools, tackles and machines will be tagged after certification

## 5.8 Use of PPE

It is SMH policy that all employees and subcontractors working on SMH worksites shall be properly protected and clothed at all times.

Choice and provision of Personal Protective Equipment (PPE) is made according to SMH Standards and Criteria and, in particular, according to the relevant activities to be performed and as indicated on the JSA and PTW requirements.

PPE items include the following, but not limited to:

- Head protection (hard hat);
- Whole body protection (long-sleeve coverall – FRC)
- Foot protection (safety boots);
- Eye and Face protection (clear and dark safety glasses, face shield, goggles, welding mask, etc.);
- Hearing protection (ear plugs, ear muffs, etc.);
- Hand protection (safety leather gloves, welding gloves, etc.);
- Respiratory protection (filter respirators, breathing apparatus, etc.);
- Fall-arrest equipment (full body safety harness and fall-arrest block / inertial reel, etc.)

All SMH and subcontractor employees shall comply with this standard and shall wear their PPE whenever it is required by the task.

Employees shall ensure that all PPE in their care is kept in a good condition and cleaned as required (any defects shall be reported to the line supervisor).

The Supervisor shall be responsible for ensuring personnel reporting to him are trained to use PPE required for the tasks and to approve new PPE issues when damaged PPE is reported to him. PPE is used only as a last resort and as a means of supporting other more effective controls. PPE is supplied free of charge to all SMH personnel at work site.

SMH Supervision shall ensure that PPE is:

- Suitable for intended use
- Maintained fit for purpose, clean and replaced when damaged or no longer effective.
- Properly used by staff through training, information and instruction on PPE use.

## 5.9 Crane Lifting and Rigging

- All lifting operations shall be carried out under Lifting Operations and Lifting Equipment Regulations (LOLER).
- SMH shall carry out lifting operations as required during a Project.

### 5.9.1 Competent Persons for Lifting Operations

The Competent Persons shall have enough appropriate practical and theoretical knowledge, skills, training and experience of lifting operations and lifting equipment which will enable them to perform lifting operations in a safe and efficient manner.

They shall also be able to identify any hazards relating to lifting operations or lifting equipment and mitigate the risks associated with these hazards to an acceptable level.

There are three (3) integral competent persons required for any lifting activity, i.e. Crane Operator, Banksman and Riggers.

### 5.9.2 Crane Operator

- The person duly qualified and authorized to operate cranes for transferring loads.
- The crane drivers are responsible for carrying out their duties with regard to lifting operations, including crane operation in accordance with the correct procedures under the supervision of the Rigging Supervisor or Foreman.
- He must complete the appropriate crane and operator checklist prior to commencing lifting operations.

### 5.9.3 Banksman

- The primary duty of a Banksman is as a signal person to assist the crane operator to perform safe and efficient lifts.
- Crane operators depend on Banksmen designated to assist them in making movements without endangering people property or the environment.
- He will also have a basic understanding of slinging and required angles as well as attachments and end terminations such as plate clamps, shackles etc.

**Banksman shall:**

- Identify the center of gravity and estimate the weight of loads;
- Identify and select the correct lifting accessories;

- Make sure lifting accessories are safely and securely attached to loads and crane hook using the correct methods or procedures;
- Ensure that the load is evenly balanced and safely secured;
- Use known hand signals that have been agreed with the Crane Operator;
- Accurately place loads in the desired landing position.

## 5.9.4 Rigger

- The Primary duty of a rigger is to move loads via a crane or hand machine such as a chain block, Tirfor winch, etc. They require sufficient knowledge of the equipment being used as well as termination types
- Loadings
- Angles and how to work as a team member to a plan.

### Riggers shall:

- Inspect accessories for damage before and after each lift;
- Familiarize themselves with the risk assessment and mitigation plan for the lifting and load movement activity in which they are involved, and ensure that their colleagues are also familiar with the job risk assessment;
- Be responsible for safe rigging of the load, including set-up of portable lifting equipment and correct selection of the rigging equipment;
- Ensure that each load being lifted is fitted with tag lines for safe controlling the load;
- Inspection of the lifting equipment condition before its use and the safe return of used equipment to the rigging store;
- Tag and remove unserviceable lifting equipment from service;
- Place defective lifting equipment in quarantine area and arrange with the Rigging Storekeeper for their inspection and testing or disposal, and
- Look after and maintain lifting equipment in the rigging store.

## 5.9.5 Lifting Plans

- SMH shall develop and have approved lifting plans for lifts during a project.
- The planned lifts are supported by Method Statements and JSA's. All personnel involved in any of the lifting activities shall participate in the JSA reviews as well as the pre-task tool box talks.

## 5.10 Work Permit System / Permit to Work

### Purpose

The Work Permit Systems are designed and intended to specify adequate safety measures in advance against identified hazards and stipulate implementation of the said safety measures by the permit to ensure safe execution of work in the designated workplace.

All work activities which are being carried out at client project premises shall require permit to work as per the client standard procedure.

Permit receiver training has to be provided by client as per their requirement.

The objectives of the Permit to Work system are (but not limited) to the following:

- To record implementation of controls and control measures in order to eliminate or mitigate hazards which have been identified during the risk management process;

- To ensure the proper authorization of designated work, whether of a specific nature or in a restricted hazardous area;
- To ensure that persons carrying out the work are informed of the exact nature of the job, relevant possible hazards, and the limitations placed on the performance of the task;
- To ensure that the persons in charge of the local and adjacent area where the work is taking place is informed of the nature of the work being undertaken;

To ensure that there is a traceable and auditable record of the type of work being carried out, and to ensure that checks have been made by a competent and responsible person;

To provide for a safe transition of work between shifts so that work hazards are understood and controlled;

To provide a hand-back procedure, which ensures that work has been completed and the site has been checked and left in a safe and fully operational condition.

During the SMH scope of work on a Project, the CLIENT PTW system shall be applicable.

SMH shall provide selected personnel to attend the CLIENT PTW training in order for those personnel to be the designated PTW Permit Receivers.

Permit Receivers shall go to the CLIENT control room / Permit Office in the morning to collect the required permits for the day.

Associated documentation shall also fall under the CLIENT system, i.e. Energy Isolations, Confined Space Entry Certificates and any other Special PTW that are required.

They shall be responsible to deliver the PTW to the work responsible supervisor of the task.

PTW shall only be issued to CLIENT trained PTW receivers.

## 6.0 Project EHS Requirements & Expectations

To outline EH&S rules and responsibilities of client while performing work on Site. Also to ensure the Project as an “Incident Injury Free” Project.

## 7.0 ORGANISATION CHART

Annexure-1 : [SMH Organization Structure](#)

## 8.0 Site Safety Rules

### 8.1 Entry / Exit to Project Premises.

- Entry/Exit to the project premises for all the project employee and materials from the designated entrance / exit point located at the Front side of the factory premises.
- General Safety Induction / Orientation program will be conducted by EHS personnel and the same has to be recorded.
- After the induction training the employee shall be provided with the photo ID Badge by the authority.
- SMH shall ensure that the mandate medical examination is done before allowing the person into the work area.
- The client security personnel will allow the employee after checking the PPE and the ID cards to the work location.



- The Record of Entry / Exit of the personnel will be maintained by the security time keeper at the gate.
- Entry of Factory vehicles / Crane entering into the project area for loading there Goods have to follow the site project rules. (As per the Entry Procedure).

## 8.2 General Site Safety Rules:

- No consumption of alcoholic beverages in the plant or on working under their influence.
- No smoking in the Project site premises.
- All personnel working on site must be more than 18 years old.
- They all are must wear full sleeve shirts and long pants along with safety shoe. Personnel in traditional dresses& loose clothing are not allowed on site.
- All hand tools must be in good shape. Chisels shall not have mushroomed heads or wooden hammers shall not have cracks etc.
- All tools & tackles shall be certified by the competent person (TUV etc.)
- All electrical power tools must be in good condition and equipped with three prong grounded plug or must be clearly marked as double insulated. Cords with multiple breaks and repairs shall not be used.
- All power tools & hand tools should be utilized with earthing. Residual current device (Residual current circuit breaker, Earth Leakage Circuit Breaker, Ground Fault Circuit Interrupter) shall be utilized in all activities requiring electrical tools.
- Proper Storage and chaining of all compressed gas cylinders and usage of trolleys.
- Usage of only ACYTELENE for Cutting and Welding and No LPG is permitted.
- "Flash back arrestors shall be fixed on both the sides i.e., on the cutting torch side & on the cylinder".
- Barricade the excavations more than 1.2mt depth.
- All Cranes / Hoists must have a valid competent person Certificate.
- Do not stand on motors, Pumps and cable trays to gain access.
- All Ladders must be in good condition and must be approved by SMH before use.
- Use non-conducting ladders for electrical works.
- Asbestos containing material usage is not permitted on site.
- Report all near misses and accidents to SMH EHS Team
- Mobile Phones must not be used for Taking photographs or Listening to music during working hours inside the Factory Premises.
- Photography is allowed only after a written permission from Client.

## 8.3 Kick off Meeting / Pre-Alignment Meeting Prior To Start Of Work

Client shall arrange for initial Site orientation/ induction of all Workmen/ Supervising personnel on 'Safety practices' before commencing work at site. This shall include brief about project site, safety policy, site safety rules and site facilities.

## 8.4 Pre-Employment & Premedical Check

Provides guidelines for basic pre-employment checks to be conducted for operators, drivers and other skilled and semi-skilled workmen deployed at site

- Before employment the employee has to undergo Pre employment medical examination. Compliance to statutory requirements must be ensured by the medical examiner. Before

entering the premises all the contractor workmen & staff has to submit the medical fitness certificate.

- The medical history of previous health related problem resulted from an accident are too checked.
- Medical examination on the vision, Hearing Breathing, Blood pressure, limbs and other medical examination are done before employment
- All the records on are maintained by the SMH.

**Annexure-2** : [Medical Checklist](#)

## 8.5 Screening and Induction of Workmen

### Purpose

To assess the suitability of a particular workman for a specified job for which he is due to be engaged.

To motivate him/her to develop general EHS awareness, educate him/her on common hazards and relevant precautionary measures.

SMH brings the concerned workmen to main gate with relevant details relating to their name, age, sex, address, father's name, into the client standard format.

Client personal will provide the EHS Induction to the workman and signs in the trial report portion of 'Performa for Screening of Workmen' to testify that the required EHS Induction has been given.

The workman is issued with the employment card for six months period.

**Annexure-3** : [Employment Card](#)

**Annexure-4** : [Performa for Screening of workmen](#)

## 8.6 Inspection of Equipment

### 8.7 General

SMH EHS Team shall have the right to inspect any equipment and to forbid its use if in his opinion, it is unsafe or dangerous to use, no claim arising there from shall be made by the worker.

**Annexure-5** : [Tools & Tackles Certification Record](#)

SMH shall offer their tools and tackles mandatorily for inspection and approval of the certification bodies before start of the work. SMH shall produce valid test certificates obtained from competent person appointed by TUV or other agencies and These Certificates shall be retained at the SMH EHS Team.

After certification all the Tools & Tackles should have sticker.

Every month lifting tools & tackles will be certified on which Color coding to be coded

**Annexure-6** : [Sticker for Tools & Tackles](#)

## 8.8 Lifting Appliances

Lifting appliances used by SMH on site must conform to the following:

- All parts must be of good condition, sound material and adequate strength and free from defects.
- Must be properly maintained, thoroughly examined and load tested by the competent person in line with the requirements as per Local Laws.
- No lifting appliance of any kind shall, except for the purpose of test, be loaded beyond the safe working load and this safe working load shall be plainly marked on the lifting appliance concerned.
- Should have TPC (Third Party Certificate) to ensure safe working load.

## 8.9 Pressure Equipment

Pressure equipment used by the contractor on site must conform to the following:

- All pressure equipment's must be of good construction, designed and constructed to accepted design standards.
- Must be properly maintained, thoroughly examined and Pressure tested by the competent person in line with the requirements of the Local Laws.
- No pressure equipment shall, except for the purpose of test, be pressurized beyond the safe working pressure and this Operating pressure, external & internal examination dates shall be plainly marked on the pressure plant concerned.

## 8.10 Staging Equipment

- Properly completed staging with safe means of access shall be provided by the contractor for all work that cannot be done from the ground or other safe means of support.
- SMH EHS Team shall have the right to reject any staging or scaffolding considered by them as unsafe and requires the contractor to effect necessary improvement before using such staging or scaffolding.
- No claim arising from the SMH EHS Team rejection of any staging or scaffolding shall be made by the employees.

## 8.11 Chemicals

- SMH must submit a list of chemicals being brought to the site along with their MSDS.
- Chemicals shall be brought in only after formal approval for its use has been granted by the concerned person, who shall follow the due requirement of Client standard approval

Annexure-7 : [Inspection Checklist](#)

Annexure-7A : [Inspection Schedule](#)

## 9.0 Hazard Identification and Risk Assessment

### 9.1 Job Safety Analysis

The Job Safety analysis will be prepared by SMH Engineer's team (Technical, Operational) and will be reviewed by the SMH EHS Team.

**JSA of the project activities works shall be approved by SMH & Client EHS team**

## Job Safety Analysis

- Initially the job safety analysis will be approved by the SMH EHS Team.
- Job safety analysis in the form of approved check list will be signed by the concerned Project in Charge & SMH EHS Team periodically basis.
- To establish, implement and maintain procedure to identify the potential hazards/aspects that exist when performing a particular activity which may cause harm to people, property and environment. Assess the risks/impacts associated with them, determine those aspects that have or can have significant impact(s) and determine controls to prevent injury, ill health, damage and pollution.

### List of Common Project Activities (as minimum) with potential Hazards:

|                                        |                                                 |                                                      |
|----------------------------------------|-------------------------------------------------|------------------------------------------------------|
| 1. Site Preparation, layout and access | 2. Fabrication activity                         | 3. Working in confined space                         |
| 4. Handling & lifting Operation        | 5. Working at height                            | 6. Working in confined space                         |
| 7. Hot work                            | 8. Electrical connection – Temporary /Permanent | 9. Assembly & testing of above 300 Ton crane at site |
| 10. Painting                           | 11. Use of gas cylinders                        | 12. Pre commissioning & Commissioning                |
| 13. Heavy lifting activity             | 14. Vehicle & Equipment Movement                | 15.                                                  |

## 9.2 Risk Assessment



## 9.3 Risk Matrix

| Risk Matrix                                        |                                  |                        |                                                 |                                    |                                                            |                                                                                          |                                                                               |                                                                                                         |                                                                                             |
|----------------------------------------------------|----------------------------------|------------------------|-------------------------------------------------|------------------------------------|------------------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Consequences                                       |                                  |                        |                                                 |                                    | Increasing Likelihood                                      |                                                                                          |                                                                               |                                                                                                         |                                                                                             |
| Severity                                           | People                           | Assets (Amount in SAR) | Environment                                     | Reputation                         | 1 - <u>Improbable</u><br>Less Than once in 10 yrs. or more | 2 - <u>Remote</u><br>Unlikely to occur during life cycle of system (once in 6 - 10 yrs.) | 3 - <u>Rare</u><br>At least once in life cycle of the system (once in 6 yrs.) | 4 - <u>Reasonably Probable</u><br>Several time during Life cycle of system or at least once in 3 years. | 5 - <u>Frequent</u><br>Repeatedly during life cycle of the system or at least once per year |
| 0                                                  | No Health Effect / Injury        | No Damage              | No Effect                                       | No Impact                          | 0                                                          | 0                                                                                        | 0                                                                             | 0                                                                                                       | 0                                                                                           |
| 1                                                  | Minor Injury illness (First Aid) | Ten Thousand           | Minor Spill or Fugitive Emission                | Individual Concern                 | 1                                                          | 2                                                                                        | 3                                                                             | 4                                                                                                       | 5                                                                                           |
| 2                                                  | Medical Aid Injury               | Hundred Thousand       | Controlled Environmental Release (with in Unit) | Local / Community Attention        | 2                                                          | 4                                                                                        | 6                                                                             | 8                                                                                                       | 10                                                                                          |
| 3                                                  | Disabling Injury(s)              | One Million            | Major Sustained Environmental Release           | Provincial Attention               | 3                                                          | 6                                                                                        | 9                                                                             | 12                                                                                                      | 15                                                                                          |
| 4                                                  | Single Fatality                  | Ten Million            | Some Permanent Ecological Damage                | Industry wide Attention            | 4                                                          | 8                                                                                        | 12                                                                            | 16                                                                                                      | 20                                                                                          |
| 5                                                  | Multiple Fatalities              | One Billion            | Permanent Ecological Damage                     | National / International Attention | 5                                                          | 10                                                                                       | 15                                                                            | 20                                                                                                      | 25                                                                                          |
| <div>ALARP: As Low As Reasonably Practicable</div> |                                  |                        |                                                 |                                    |                                                            |                                                                                          |                                                                               |                                                                                                         |                                                                                             |

- Annexure-8 : [Procedure for JSA](#)  
 Annexure-9 : [JSA Format](#)  
 Annexure-10 : [JSA for All Activities](#)

## 10.0 Personal Protective Equipment (PPE)

It is SMH responsibility to see that the Personal Protective Equipment such as safety shoes, safety belts, lifelines, helmets, etc., as applicable depending on the job requirement are provided as specified by the client representative and used.

SMH must ensure that all his workmen at all the times at the working site must wear safety shoes & helmets. Workers will be advised not to wear loose clothing.

SMH personnel shall not enter the working plant areas without proper permission. Additional PPE specific to the plant in the working area must also be followed as specified by the client representative.

On the Helmet Contract has to stick sticker with following details:

- Company Logo
- Name of worker.
- Induction training taken(if provided by client)

**Annexure-11 :**      [PPE Selection Matrix](#)

## 11.0 Training and Awareness

SMH shall arrange for EHS training of all workmen / supervising personnel on EHS through the client EHS Lead before starting any work at Site.

The training shall cover the following topics:

- Site hazards,
- Precautions,
- Communication systems
- Emergency response procedures
- PPE minimum requirements

Training will be imparted on critical activities such as:

- Working at Height
- Hot works
- Confined space
- Demolition of structure
- Scaffolding
- Shifting of material by crane
- Erection & installation of heavy equipment.

Training records will be maintained by SMH EHS Team. The record should include the following:

- Names of those trained
- Course content
- Date and time
- The names of the instructors.

The EHS Lead of SMH will periodically review the training quality and records to verify that training is being conducted which meets the criteria.

Client should provide EHS Training sticker on the helmet to all SMH employees who under goes the training and will keep register for the employee's record for training, medical check-up, among other things.

## 11.1 Safety notice board:

Safety notice board shall show information of the following:

- Total man-hours worked
- Accidents occurred
- Safety records
- Important telephone numbers
- Emergency preparedness plan
- Fire points

This shall be displayed at site office while

- Safety posters
- Signboards

Shall be displayed at required locations.

Annexure-12 : [Training Matrix](#)  
Annexure-13 : [Training Record Format](#)  
Annexure-13A : [Training Schedule Format](#)

## 12.0 Management of EHS Reward & Reprimand

Management of EHS requires detailed planning & active participation of the execution team at various stages of a job. Improvement in EHS performance is acknowledged through recognition to motivate the members of the execution team. Deficient management of EHS is reprimanded suitably

### 12.1 Following are the Motivational Schemes

- SMH will issue Merit Certificates for Zero Incidents on the site.
- Housekeeping area
- Safest workmen

### 12.2 Safety Infringement

Safety infringement will not acceptable at site and anybody found to be violating shall be dealt with accordingly as per the following procedure:

| 1 <sup>ST</sup> OFFENCE | 2 <sup>ND</sup> OFFENCE | 3 <sup>RD</sup> OFFENCE |
|-------------------------|-------------------------|-------------------------|
| VERBAL WARNING          | WRITTEN WARNING         | SITE TERMINATION        |

Annexure-14 : [Punishment Clause](#)

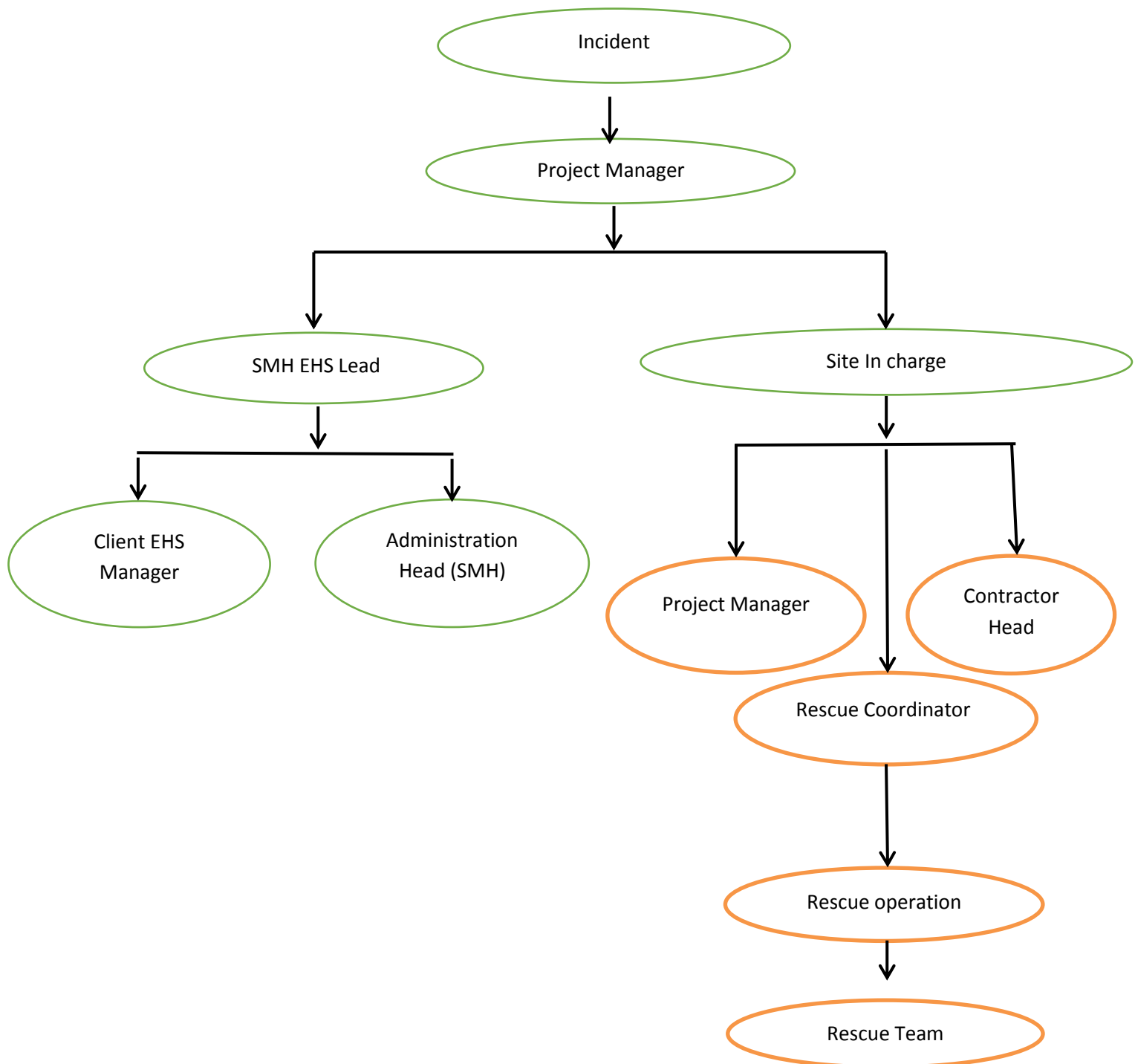
## 13.0 Emergency Preparedness & Response

Preparedness for dealing with emergencies is demonstrated by:

- Identifying emergency situations and assessing their potential impact.
- Emergency organization and responsibilities.
- Operational and logistics support availability and mobilization.
- Checklists of contacts / actions.
- Ensuring the availability of key personnel through a duty / call out system.
- Regular drills to ensure the effectiveness of the emergency preparedness.

***During Projects, emergency response and rescue shall be undertaken by the CLIENT's Emergency Response Team.***

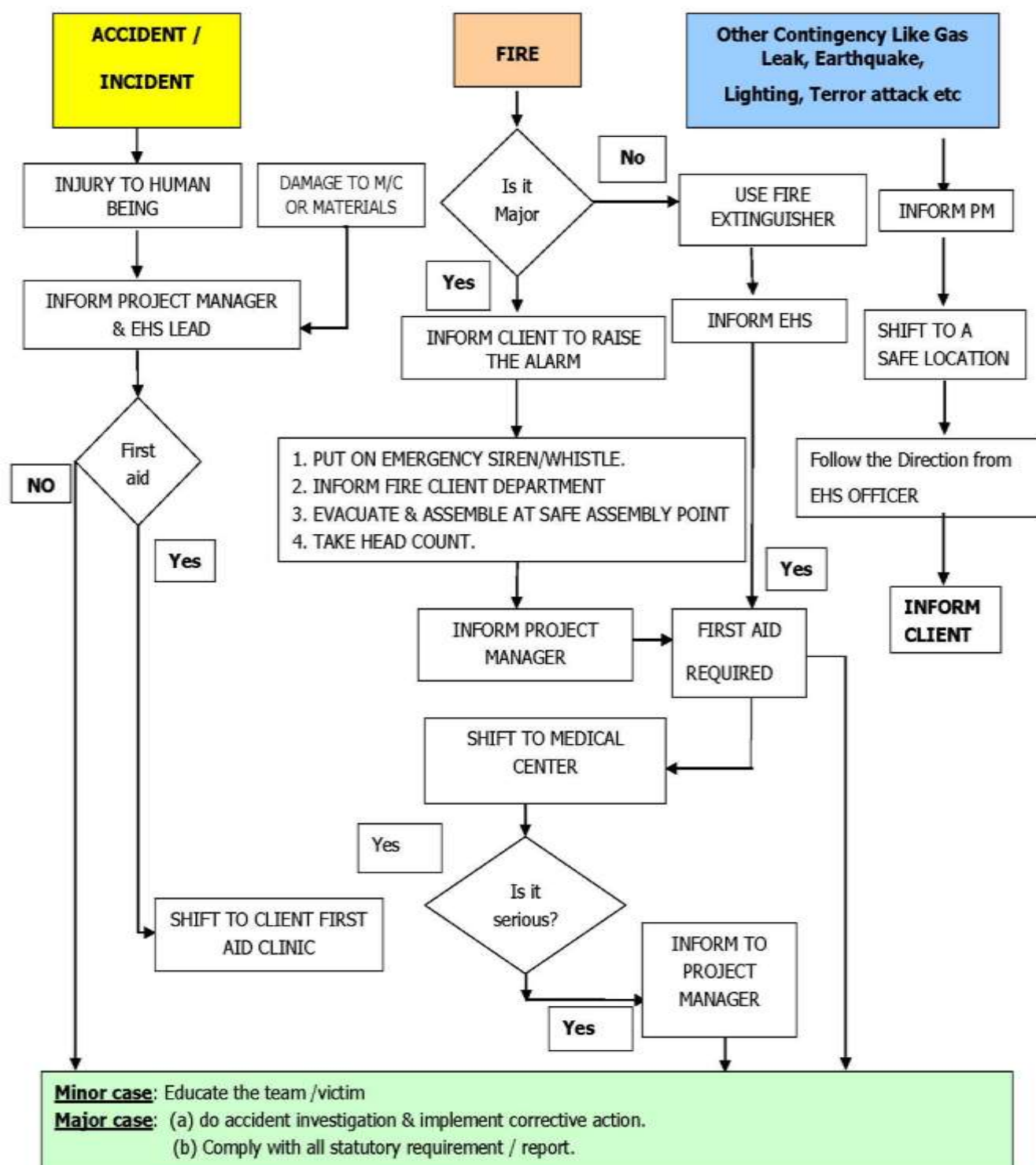
A list of Emergency Contacts within SMH and CLIENT must be made available for all sites worked on.





Annexure-15 : [Emergency Response Plan](#)

## 13.1 Emergency Response Plan for Project



SMH main environmental strategy is oriented to minimize impacts arising from its project activities. All spills shall be reported and spill kits shall be utilized for clean-up. Contaminated materials shall be disposed of according to the plant waste disposal regulations for disposal of oil and chemical contaminated materials.

Waste generated on site shall be properly segregated and, clearly marked waste skips / waste bins are to be utilized for the different waste materials to be disposed of. All waste shall be disposed of as described in the Client's waste disposal procedure.

Personnel carrying out hazardous waste handling / disposal, shall ensure that they use the correct PPE for that specific task.

## 14.0 Performance Evaluation & Monitoring

A periodic (monthly) evaluation on SMH EHS Performance within the duration of their contract in the specified project will be coordinated by the SMH Project Manager by utilizing the evaluation form depicted in annexure. This periodic EHS Evaluation Report will help us to improve the safety culture.

Annexure-16 : [EHS Performance Evaluation Report](#)

## 15.0 Incident Reporting, Investigation and Analysis

### 15.1 Incident Investigation

Near miss incidents and major accidents shall be investigated / analyzed for its cause and corrective / preventive actions.

Those registers will be maintained at the project safety office.

### 15.2 Accident Not Involving Injury to Personnel

In case of any accident which does not involve injury to any personnel, the In-charge of the area in which the accident has taken place should prepare a detailed report clearly mentioning all the details below:

- The date, time
- Place/ location
- Equipment involved
- Details of accidents including damages caused
- Approximate amount of loss involved on account of the accident
- Indicating details of items to be produced on account of the accident etc.

The report should also identify probable reasons / causes for the accident.

This report should be routed through the proper channels to the concerned authorities for necessary action and for evolving measures to prevent recurrence.

### 15.3 Accidents Involving Injury to Personnel

Whenever any accident involves injury to any personnel, the In-charge of area in which the accident has taken place should prepare a report as above also indicating the nature of injury caused to the person and route through the proper channel to the concerned authority, including to the concerned Government Statutory Bodies.

The in charge of first aid and the medical officer must enter their diagnosis and the nature of injury along with the treatment administered and the need for rest / hospitalization.

The injured person shall not be permitted to resume duties unless and until fitness certificate is issued to him by the attending medical officer.

## 15.4 Accident involving serious injury likely to be fatal to personnel

Whenever any accident involves serious injury to any personnel which could result in fatal accident, the In-charge of area in which the accident has taken place should prepare a detailed report as above. Also the report should indicate the nature of injury caused to the person and route through the proper channel, to the concerned authority, including to the concerned Government Statutory Bodies.

The In-charge of first aid and the medical officer must enter their diagnosis and nature of injury along with the treatment administered and the need for rest / hospitalization / certification of death (in respect of fatal accident). In the event of fatal accident certification of death has to be along with Post-mortem report from the concerned Government Medical Authorities.

The injured person shall not be permitted to resume duties unless and until fitness certificate is issued to him by attending medical officer.

Annexure-17 : [Incident Investigation Report format](#)

Annexure-17A : [Near Miss Report format](#)

## 16.0 Protection of Site

The Contractor shall protect and preserve the works all damage or accident by providing temporary roofs, windows and door coverings, boxing or other construction as required by the Project Management Consultant. This protection shall be provided for all property adjacent to the Site as well on the Site.

## 17.0 Performance Evaluation and Reporting

SMH EHS team is required to make periodic, usually monthly safety reports during the course of the project, which shall include at on all injuries and damage sustained during the course of the Contract as well as the safety performance statistics. These reports will be discussed during interim and final Contractor performance Reviews.

### 17.1 Inspection and Safety Auditing

Compliance with any work permit system in operation, the operational condition of safety equipment, and there liability, service ability and maintenance of work tools and equipment may be established by unannounced spot checks carried out by SMH Management.

The effectiveness of these checks will be enhanced by audits comprising more formal investigations of compliance with relevant written standards (which may be included in the Contract) and which will be coordinated by Project Manager.

Whenever the SMH employees found to be working in an unsafe manner it will be advised accordingly and called upon to take corrective action without delay. If appropriate, work will be stopped until the situation is rectified. Significant health and safety violations will be recorded in writing.

As part of its own inspection process, SMH shall establish a system of checks and audits to ensure that the work being performed is in accordance with safety requirements applicable to the project.

**Annexure-18** : [Site Inspection Report](#)

## 17.2 Weekly Safety Walk-around

On a weekly basis, an official HSE walk-around of the various work locations will be conducted, in which Management and HSE Personnel will participate. Following such walk around, a meeting will be held to discuss any items that need corrective action and, in particular, discuss any candidates who qualify for being awarded for noteworthy HSE performance.

## Communication

All awards will be posted on all HSE notice boards on the site with details of the individual or team and the reasons why they qualified for the award

## 18.0 Safety Meetings

### 18.1 Tool box talks

Every morning before start of job TBT shall be conducted by the concerned supervisor in presence of Safety officer. Incident related topic and the work place monitoring will be covered.

The EHS Lead / Supervisor officer will give training on tool box talk to the supervisors on their relevant subjects.

### 18.2 Mass Toolbox talks:

Depending upon the site condition mass tool box talk shall be conducted with all Management and work force.

### 18.3 The Weekly Meeting:

The weekly meetings will be conducted on every Sunday. This meeting will be attended by the SMH Project Manager, SMH EHS Manager, Site Engineers, Site In-charge.

The topics will be:

- Previous week's accidents / incident reports
- Unsafe working conditions



- Near Misses
- Safe and Unsafe act
- Client observations
- Project status

The minutes of the meeting containing reviews and suggestions will be submitting to the Project Manager / EHS Manager for documentation.

## 18.4 The Monthly Meeting:

The Monthly meeting will conduct in the last working day of the month.

This meeting will be attended by the Project Manager, EHS Manager. Site Engineers, Site In-charge.

The Topics will be the overall review of safety for the month.

Annexure-19 : [TBT Report](#)

## 19.0 First Aid

To facilitate basic First-Aid treatment to the casualty (victim of an accidental injury at workplace).

To analyses the causes of First-aid cases so as to take necessary preventive action to prevent recurrence.

First-Aid kits inside a First-Aid Box are provided at convenient locations under the charge of a trained and certified person with a list of approved medicines/aids made available.

If a First-Aid center is established inside the premises of the workplace the same is maintained under a full time trained attendant to provide First-Aid to the casualties.

EHS shall checks all the First-Aid kits weekly and facilitates availability of the required quantity of all the specified contents.

In case of an injury the injured person requiring first-aid treatment is sent for the same expeditiously and a request memo mentioning the personal details of the injured person is forwarded to the Time Office for record.

First Aid record Register shall be maintained by SMH EHS Team for keeping on record the names of the casualty / injured person

The cases requiring further attention shall be transferred to nearest hospital.

SMH will have their own emergency vehicle 24X7.

Annexure-20 : [First Aid Register](#)

Annexure-21 : [Analysis of First Aid Cases](#)

## 20.0 Roles & Responsibilities

### 20.1 Organization / Roles and Responsibilities

This section describes the HSE Team organization and their respective Roles and Responsibilities, and also defines the HSE related Roles and Responsibilities of Project Management / Supervision.

## HSE Organizational Chart



## 20.2 Senior Management

The Senior Management is responsible for the overall arrangements and for ensuring that the company's operations are executed at all times in such a manner as to ensure, so far as is reasonably practicable, the health, safety and welfare of all employees and others who may be affected by its operations.

Managing Director, Director General and Technical Director are included in SMH senior management. In particular the Senior Management will:

- Ensure there is an effective company policy for health and safety and that all employees, contractors and temporary workers are made aware of their individual responsibility.
- To understand and ensure, through the appointment of competent persons, that the company's responsibilities as employers under the Health and Safety at Work etc. and any relevant Acts of Parliament and Statutory Instruments are met.
- To appoint / Employ a Safety Manager responsible for SMH EHS Department.
- To ensure that all Senior Management understand and fulfill their responsibilities with regard to health and safety.
- Arrange for funds and facilities to meet the requirements of company policy and legislation.
- Make provision for adequate and appropriate training to be given to all employees.
- To ensure that notification and reporting procedures to the relevant statutory authorities are carried out.
- Set a personal example on all matters of health and safety.

## 20.3 Senior Management Responsible for Health and Safety

The Senior Management Responsible for Health and Safety is accountable for all matters relating to health, safety and welfare of employees and those affected by the companies operations.

In particular the Senior Management Responsible for Health and Safety will:

- Understand and ensure that the implications and duties imposed by new Saudi Acts, Statutory Instruments, H.S.E. Guidance Notes and Codes of Practice are brought to the attention of the Board of Directors.
- To bring company related health and safety matters to the attention of the Board of Directors at regular intervals.
- To ensure that good communications exist between employer and employees and are maintained.
- Liaise with the person appointed in the role of Safety Manager over the full range of their duties and responsibilities, with respect to inspections, audits, report recommendations, changes in legislation and advice obtained from other sources.
- Ensure adequate means of distributing and communicating health, safety and welfare information obtained for the H.S.E., Safety organisations and Trade associations regarding new techniques of accident prevention, new legislation requirements and codes of practice etc.
- Ensure that an adequate programme of training for health and safety is established and that the safety culture is encouraged amongst employees.
- Set a personal example at all times by using the correct personal protective clothing/equipment and following all safety requirements and procedures.

## 20.4 Project Managers

The primary role of the Project Manager is to advise the Senior Management on all safety, health and welfare matters to ensure the Company complies with its statutory obligations.

The Project Manager is designated responsibility by the Senior Management responsible for health and safety to control and update this Safety Manual and to ensure that all Departments operate to the procedures and instructions contained there In particular.

The Project Manager shall:

- Understand the application of the Health and Safety at Work, etc. and other legislation relevant to the Companies business.
- Keep up to date with changes in current legislation and to bring to the attention of the Director responsible for Health and Safety any relevant new legislation.
- Attend such courses/seminars run by external sources to enable accurate interpretation of legislation to enable implementation within the organisation.
- Ensure that all “assessments” as required by legislation are conducted and reviewed at relevant intervals and to maintain records of the same.
- To recommend control measures and advise on the standard of P.P.E. issued to employees.
- Conduct health and safety inspections and prepare reports of all the company’s operations.
- Immediately contact the Senior Management responsible for health and safety if situations are found, that in the opinion of the Safety Manager, require immediate rectification or the stopping of any operation.
- To notify the Senior Management responsible for health and safety if the corrective action agreed after any workplace inspection is not implemented by the arranged date.
- To carry out investigations into all accidents and near-miss incidents and to record the findings on the relevant forms.
- To arrange Health surveillance as instructed.
- To highlight areas where training/certification is required to meet the standards imposed by Legislation, Approved Codes of Practice, or E.H.S. guidance.

- To bring new techniques for improving health, safety and welfare to the attention of the Senior Management responsible for health and safety.
- To set a personal example by wearing appropriate personal protective clothing/equipment and observing all safety requirements/procedures.

## 20.5 Safety Manager

The primary role of the Safety Manager is to advise the senior management on all safety, health and welfare matters to ensure the Company complies with its statutory obligations.

The Safety Manager is designated by the senior management to the Environment Health and Safety to control and update the company Safety Manual and to ensure that all Departments operate to the procedures and instructions contained there:

In particular the Safety Manager shall:

- Understand the application of the Health and Safety at Work, and other legislation relevant to the Companies business.
- Keep up to date with changes in current legislation and to bring to the attention of the senior management responsible for Health and Safety any relevant new legislation.
- Attend such courses/seminars run by external sources to enable accurate interpretation of legislation to enable implementation within the organization.
- Ensure that all “assessments” as required by legislation are conducted and reviewed at relevant intervals and to maintain records of the same.
- To recommend control measures and advise on the standard of P.P.E. issued to employees.
- Conduct health and safety inspections and prepare reports of all the company’s operations.
- Immediately contact the Director responsible for health and safety if situations are found, that in the opinion of the Safety Manager, require immediate rectification or the stopping of any operation.
- To notify the Director responsible for health and safety if the corrective action agreed after any workplace inspection is not implemented by the arranged date.
- To carry out investigations into all accidents and near-miss incidents and to record the findings on the relevant forms.
- To arrange Health surveillance as instructed.
- To highlight areas where training/certification is required to meet the standards imposed by Legislation, Approved Codes of Practice, or E.H.S. guidance.
- To bring new techniques for improving health, safety and welfare to the attention of the senior management responsible for health and safety.
- To set a personal example by wearing appropriate personal protective clothing/equipment and observing all safety requirements/procedures.

## 20.6 Managers/Heads of Department

Each Manager/Department Head is responsible for his personal safety and that of all personnel under his authority, including others who may be affected by the company’s activities.

In particular they will:

- Understand and implement the company safety policy.
- Appreciate the responsibilities of personnel under their authority and ensure that each employee knows his responsibility and are equipped to play their part.



- Conduct Risk Assessments on activities within their department ensuring that the methods and systems of work are safe. Also that the necessary procedures, rules and regulations designed to achieve this are formulated, published and applied.
- Provide written instructions of work methods outlining potential hazards and precautions, and ensure they are complied with.
- Ensure accident and near-miss reporting procedures are understood and complied with, and assist with accident investigations where appropriate.
- Ensure all employees are suitably trained/competent to carry out the prescribed task and that the necessary licenses/certificates of competence are in force and appropriate.
- Ensure the Statutory Notices, the Safety Policy, Insurance Certificate and the names of Appointed First Aiders are displayed and maintained in prominent locations.
- Ensure that all new employees in the company are provided with a copy of the policy statement, receive such induction training as may be laid down in procedures, are issued with personal protective equipment as required and their personal responsibilities as set out in this manual.
- Reprimand any employee for failing to discharge their health and safety responsibilities.
- Set a personal example with regard to health and safety matters.

## 20.7 Technical and Electrical Engineering Manager

The Technical and Electrical Engineering Manager is responsible for his personal safety and that of all personnel under his authority, including others who may be affected by the company's activities.

In particular he will:

- Understand and implement the Company Safety Policy.
- Appreciate the responsibilities of personnel under their authority and ensure that each employee knows his/her responsibility and are equipped to play their part.
- Ensure that all written schemes and procedures of this document are prepared, contain sufficient detail for each task to be critically analyzed, and fully comprehensible to all required to use them.
- Prepare and maintain a scheme which identifies work equipment requiring inspection by competent persons and ensuring that the equipment is easily identifiable and available for inspection on the date required.
- Prepare and maintain suitable records of all inspections. These records to identify precisely what was inspected, how, who by, when, any defects found, remedial action taken and the date/time of the next inspection.
- As the appointed "responsible person" under the Supply of Machinery Regulations ensure that all items of work equipment manufactured in house comply with the essential health and safety requirements of schedule three of the regulations and that all necessary documentation i.e. user and maintenance guides etc. are produced.
- Conduct Risk Assessments on activities within their department ensuring that the methods and systems of work are safe. Also that the necessary procedures, rules and regulations designed to achieve this are formulated, published and applied.
- Ensure that all engineering construction work under his control complies with all relevant construction statutory instruments.
- Ensure accident and near-miss reporting procedures are understood and implemented. Assist with accident investigations where appropriate.

- Ensure all employees and sub-contractors are suitably trained/competent to carry out the prescribed task and that the necessary licenses/certificates of competence are in force and appropriate.
- Ensure the Statutory Notices, the Safety Policy, Insurance Certificate and the names of Appointed First-Aiders are displayed and maintained in prominent locations.
- Ensure that the impending start of any new employee is advised to the Company Secretary in good time.
- Reprimand any employee for failing to discharge their health and safety responsibilities.
- Set a personal example with regard to health and safety matters.

## 20.8 Supervisors/Foreman

Each Supervisor/Foreman is responsible for his personal safety and that of all personnel under his authority, including others who may be affected by the company's activities.

Health, Safety and Environmental activities are line responsibilities. First line supervisors (such as, but not limited to, rigger / welding foremen etc.) are responsible for ensuring that all activities on site are carried out in a manner that secures the Health and Safety of the workforce (and others who may be affected by their acts and / or omissions), and that their actions do not adversely affect the environment or security.

As a part of the full commitment to no accidents, no harm to people and no damage to the environment, SMH Supervisory Personnel shall exhibit positive HSE behaviours by personal example, by reinforcing and recognizing positive behaviours and through adopting a pro-active leadership role in creating and managing the HSE Management System on site at all times.

In particular they will:

- Make sure that workers work in compliance with safety and its regulations;
- Make sure that workers use any equipment, protective devices or clothing the employer requires;
- Tell workers about any workplace health and safety hazards that the supervisor is aware of;
- Give workers written instructions on measures and procedures to be followed for their own protection, if prescribed by regulation; and
- Take every precaution reasonable in the circumstances to protect workers.

## 20.9 All Employees

The Management of Health and Safety at Work Regulations which places responsibilities on the employer and employees alike. In connection with this.

the Company reminds employees of their duties to take care for their own health and safety and that of others who may be affected by their acts or omissions.

Additionally, employees shall co-operate with the company to enable it to discharge its own responsibilities successfully.

Furthermore, all employees are expected to:

- Carry out assigned tasks and duties in a safe manner, in accordance with instructions, and to comply with safety rules/procedures, regulations and codes of practice.
- If aware of any unsafe practice or condition, or if in any doubt about the safety of any situation, consult their supervisor.

- Obtain and use the correct tools/equipment for the work and not to use any that are unsafe or damaged. All tools, equipment and personal protective equipment must be stored in the approved place after use.
- Ensure that all guards are securely fixed and that all safety equipment and personal protective clothing/equipment provided are used.
- Not to operate any plant or equipment unless authorised.
- To report any accident, near-miss, dangerous occurrence or dangerous condition to their line management.
- To switch off and secure unattended plant or equipment.
- To avoid improvised arrangements and suggest safe ways of eliminating hazards.
- Not to participate in horseplay or place fellow employees in danger by their actions.

## 20.10 EHS Supervisor

The EHS Supervisor is responsible to support and assist with the duties assigned to the HSE Manager.

The EHS Supervisor is responsible for:

- Continuously monitor the performance of the HSE team on site and report any deficiencies to the HSE Manager for action.
- Be on site during work activities and to provide guidance and support to the patrolling Safety Officers.
- The HSE EHS Supervisor shall immediately initiate investigations for any incident, accident, near miss or property damage that may occur and reported to them.

The EHS Supervisor is responsible to report any of these occurrences, as well as any deficiencies on site, including PPE requirements, to the HSE Manager immediately. EHS Supervisor shall support the HSE Manager in efficiently and effectively implementing safe working systems at the work site.

## 20.11 Project Engineers

The Project Engineer is responsible for ensuring that the activities under the contractual work scope are completed in accordance with the relevant approved criteria, standards and procedures. He is also responsible to ensure that work under his control is conducted with due regard to HSE issues, and that personnel are aware of the Client, SMH and subcontractor Safety policies and commitments to providing a safe working environment throughout the project.

## 20.12 Safety Officers

Safety Officers on site are responsible for continual monitoring of safe work practices on site. They are to correct any anomalies observed and record all observations made during their shift. All observations made by the Safety Officers that require rectification must be reported to the relevant Supervisor and the shift EHS Supervisor.

Any observation that could negatively impact on the safety of personnel, and requires immediate rectification, must immediately be reported to the Supervisor and the task may be stopped until the situation is brought to a satisfactory level of safety. They shall also communicate with the work force at the beginning of the shift on a specific and relevant topic.

## 21.0 Fire Fighting Equipment

SMH Hazard Control offers a comprehensive standard for it's the fire protection, rescue and safety needs of the project.

Our Fire Fighting Equipment includes the following:

- Fire Extinguishers, Dry Chemical Agents
- Self-Contained Breathing Apparatus, and Respirators
- High Pressure Breathing Air Compressors
- Fire Fighting PPE: Bunker Gears, Flash Hoods, Boots, Helmets and Gloves
- Fire Hoses, Adaptors and Small Gear
- SCBA, Cylinder and Hoses
- Training and Training Facilities
- Fire Hydrants, Manifolds and Valves
- Hose Reels Stations, Cabinets and Accessories

Annexure-22 : [Register of Fire Extinguisher](#)

## 22.0 INDUSTRIAL HYGIENE

SMH shall make all arrangements for close adherence to Occupational Health requirements and guidelines of the client.

Implementation of the above requirements may need qualified personnel, measurement devices and other resources which Contractor shall arrange at its own expense.

Contractor shall be responsible for;

- Indoor environment quality of buildings under their control shall be as per client.
- Porta cabin and other facilities shall meet client specifications and shall be approved by client prior to site mobilization/occupation.
- Sanitary facilities shall be depending on client.
- Personal exposure monitoring.
- Training and awareness of their employees on occupational hygiene issues.

## 23.0 Housekeeping / Waste Management

SMH shall remove all waste material and rubbish from and around the place of work and leave the job site thoroughly cleaned up and ready for use. SMH shall arrange to segregate and dispose waste in line with the requirements of the Hazardous Waste (Management & Handling) rules as applicable.

Work area shall be maintained so that soil & ground water is not contaminated on account of any loss of containment from chemicals such as engineering oils.

Dedicated person (Janitor) shall be deployed on daily basis for House Keeping.

Annexure-23 : [Waste management log sheet](#)

## 24.0 OTHER ATTACHMENTS

Annexure-24 : [Important Telephone Numbers](#)  
 Annexure-25 : [Lock Out Tag Out Procedure](#)  
 Annexure-26 : [Fire Risk Management](#)  
 Annexure-27 : [Fire Extinguisher Inventory List](#)  
 Annexure-28 : [Rewards & Recognition](#)





# PROJECT SPECIFIC SAFETY PLAN

SMH Industrial Services

Operation – Maintenance – Industrial  
Construction & Support Services

PO Box 488, Tel: +966 3 362 0494

|             |   |                                                |
|-------------|---|------------------------------------------------|
| Annexure-29 | : | <a href="#"><u>Monthly Safety Schedule</u></a> |
| Annexure-30 | : | <a href="#"><u>PPE Supply Register</u></a>     |
| Annexure-31 | : | <a href="#"><u>CAPA Register</u></a>           |
| Annexure-32 | : | <a href="#"><u>Monthly Audit Format</u></a>    |
| Annexure-33 | : | <a href="#"><u>Weekly Report Format</u></a>    |
| Annexure-34 | : | <a href="#"><u>Monthly Report Format</u></a>   |

**SMH HSE RECORDS**

**Construction & Support Services**

PO Box 488 Tel: +966 3 362 0494  
Jubail 31951 Fax: +966 (0)3 362 3373  
Saudi Arabia 33 Email: info@smharabia.com

**HSE SAFE MANHOURS:**

**YTD TOTAL SAFE MAN-HOURS: 1,356,116 (2020)**

**3 YEARS SAFE MAN-HOUR SUMMARY**

| <b>Job Site Name</b> | <b>2020</b> | <b>2019</b> | <b>2018</b>  |
|----------------------|-------------|-------------|--------------|
| Main Office          | 109062.1    | 143279.55   | 144,466.89   |
| Workshop             | 123057.56   | 246664      | 183,169.50   |
| S-CHEM               | 941532.58   | 1005496     | 1,081,082.80 |
| SABIC                | -           | -           | -            |
| SAUDI KAYAN          | -           | -           | -            |
| PCC                  | -           | -           | -            |
| Others               | 16311       | 30180       | 31,100.00    |
| SAUDI KAYAN - TAM    | 63810.5     | -           | -            |
| SCHEM - TAM          | -           | 7,652.50    | 26,705.50    |
| IBB SAFCO - TAM      | -           | -           | -            |
| IBN ZAHR - TAM       | 30435.5     | 7,172.50    | 3,329.00     |
| SAHARA - TAM         | 300         | -           | -            |
| TASNEE - TAM         | 1380        | 149551.8    | 19,225.50    |
| SABIC ARRAZI - TAM   | -           | -           | -            |
| SHARQ - TAM          | -           | 2,800.50    | 555.50       |
| GAS - TAM            | 2057.5      | 512         | 8,989.00     |
| AL-BAYRONI - TAM     | -           | -           | 34,819.00    |
| ARRAZI - TAM         | 32958       | 62,201.50   | 8,898.00     |
| GAS YANBU            | -           | 35817.5     | 34,724.50    |
| SIPCHEM TAM          | -           | 70,539.50   | 9,474.00     |
| SAMAC TAM            | 2246        | 8,049.00    | 10,395.00    |
| SABIC KEMYA -TAM     | 260         | 72.00       | 166.00       |
| MAADEN - TAM         | -           | 6305        | 6,251.50     |

|                 |                     |                    |                     |
|-----------------|---------------------|--------------------|---------------------|
| IBN RUSHD - TAM | -                   | 180,899.50         | -                   |
| SADARA - TAM    | 7680                | 11,915.00          | -                   |
| SATORP - TAM    | 25025.5             | 264.00             | -                   |
| <b>TOTAL</b>    | <b>1,356,116.24</b> | <b>1,969,370.3</b> | <b>1,609,460.69</b> |

Page 1 of 2

## SMH HSE RECORDS

**SMH Industrial Services**  
Operation – Maintenance – Industrial  
Construction & Support Services

PO Box 488  
Jubail 31951  
Saudi Arabia 33  
Tel: +966 3 362 0494  
Fax: +966 (0)3 362 3373  
Email: info@smharabia.com

## HSE KEY PERFORMANCE INDICATORS

| Year | Safe Man hours | OSHA Recordable Cases |                  |                        |                       |                 | OSHA Non- Recordable Cases |                 |                 |
|------|----------------|-----------------------|------------------|------------------------|-----------------------|-----------------|----------------------------|-----------------|-----------------|
|      |                | Fatalities            | Lost Time Injury | Medical Treatment Case | Restricted Work Cases | Frequency Rates | Fire Incident              | Property Damage | First Aid Cases |
| 2020 | 1,356,116      | 0                     | 0                | 0                      | 0                     | 0               | 0                          | 0               | 0               |
| 2019 | 1,969,370      | 0                     | 0                | 0                      | 0                     | 0               | 0                          | 0               | 1               |
| 2018 | 1,609,460      | 0                     | 0                | 0                      | 0                     | 0               | 0                          | 0               | 1               |

| S. No. | Parameter                         | Unit Of Measurement              | 2021 Target      | 2020 | 2019 | 2018 | Comments                               |
|--------|-----------------------------------|----------------------------------|------------------|------|------|------|----------------------------------------|
| 1      | Fatality                          | No. 's                           | 0                | 0    | 0    | 0    |                                        |
|        |                                   |                                  | >1               |      |      |      |                                        |
| 2      | Loss Time Injury                  | No. 's                           | 0                | 0    | 0    | 0    |                                        |
|        |                                   |                                  | >1               |      |      |      |                                        |
| 3      | Fire Incident                     | No. 's                           | 0                | 0    | 0    | 0    |                                        |
|        |                                   |                                  | >1               |      |      |      |                                        |
| 4      | Potential Incident Frequency Rate | PIFR / 200,000                   | 0-0.000015       | 0    | 0    | 0    | PIFR / 200,000                         |
|        |                                   |                                  | 0.000015-0.00003 |      |      |      |                                        |
|        |                                   |                                  | >0.00003         |      |      |      |                                        |
| 5      | Medical Treatment Case            | MTI X 200,000 per Man hours work | 0 -0.3           | 0    | 0    | 0    | <u>MTI X 200,000</u><br>Man hours work |
|        |                                   |                                  | 0.3-0.6          |      |      |      |                                        |
|        |                                   |                                  | > 0.6            |      |      |      |                                        |
| 6      | Restricted Work Cases             | RWC X 200,000 per Man hours work | 0-0.33           | 0    | 0    | 0    | <u>RWC X 200,000</u><br>Man hours work |
|        |                                   |                                  | 0.33-0.50        |      |      |      |                                        |

|                                                                                                                                                                 |                 |                                     |         |   |       |       |                                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------|---------|---|-------|-------|----------------------------------------|
|                                                                                                                                                                 |                 |                                     | >0.5    |   |       |       |                                        |
| 7                                                                                                                                                               | First Aid Case  | FAC X 200,000 per Man<br>hours work | 0 -0.3  | 0 | 0.126 | 0.124 | <u>FAC X 200,000</u><br>Man hours work |
|                                                                                                                                                                 |                 |                                     | 0.3-0.6 |   |       |       |                                        |
|                                                                                                                                                                 |                 |                                     | > 0.6   |   |       |       |                                        |
| 8                                                                                                                                                               | Property Damage | PD X 200,000 per Man<br>hours work  | 0 -0.6  | 0 | 0     | 0     | <u>PD X 200,000</u><br>Man hours work  |
|                                                                                                                                                                 |                 |                                     | 0.6-1.0 |   |       |       |                                        |
|                                                                                                                                                                 |                 |                                     | > 1.0   |   |       |       |                                        |
| <div><div>Legend</div><div><div><div></div><div>On Track</div></div><div><div></div><div>At Risk</div></div><div><div></div><div>Missed</div></div></div></div> |                 |                                     |         |   |       |       |                                        |



## SMH EXPERIENCE LIST

Following are the details (Project Site, Jobs Undertaken, Contact Person details, and brief description of equipment) of SMH past experiences

- 1) Company : APCC  
Project : K-6500 Carrier gas compressor overhauling – Sep 2021.  
Manpower : 15 Nos  
Contact Person : Jahangir A. Hudli Planning Section Head.

| SL# | EQUIPMENT NAME                                  | TAG#     | Make          | BRIEF SCOPE           |
|-----|-------------------------------------------------|----------|---------------|-----------------------|
| 1   | Complete Overhauling of Carrier gas Compressor. | 3-K-6500 | ELLIOTT EBARA | Complete overhauling. |

- 2) Company : TASNEE  
Project : SERVICE FOR EXT GB BEARING REPLACE. PP plant – May 2021.  
Manpower : 15 Nos  
Contact Person : Faisal Al- Marri- Superintendent PP.

| SL# | EQUIPMENT NAME                                   | TAG#       | BRIEF SCOPE                                                                 |
|-----|--------------------------------------------------|------------|-----------------------------------------------------------------------------|
| 1   | Partial overhauling of Extruder Gearbox for Line | 2-EA-3454X | Inspection and Replacement of Bearing of 5 No's of Shafts on the input side |

- 3) Company : TASNEE  
Project : Rotating Lump sum Contract - HDPE - TAM- May 2021.  
Manpower : 86 Nos  
Contact Person : Ayman S Bahamdan- Superintendent HDPE.

| SL# | EQUIPMENT NAME       | TAG#     | BRIEF SCOPE                                                                                            |
|-----|----------------------|----------|--------------------------------------------------------------------------------------------------------|
| 1   | Black line Extruder  | 5EX-5301 | Mixer, Hydraulic Cylinder, Mixer Gear reducer Major Oh and Coupling Alignment.                         |
| 2   | Agitator for 5W-5221 | 5MX-5221 | Inspect/Replace Agitator shafts, Replacement of Protection sleeve, Radial Shaft sealing ring, Gearbox. |
| 3   | Agitator for 5W-5222 | 5MX-5222 | Inspect/Replace Agitator shafts, Replacement of Protection sleeve, Radial Shaft sealing ring, Gearbox. |

|    |                                           |            |                                                                          |
|----|-------------------------------------------|------------|--------------------------------------------------------------------------|
| 4  | Reciprocating Compressor                  | 5K-3201    | Major OH including Piston Skirt Replacement with OEM                     |
| 7  | Cracker Gas Compressor                    | 5K-3501    | Liquid Ring Compressor-Major OH including Shaft replacement if required. |
| 6  | Refrigeration Compressor/Screw Compressor | 5K-6101B   | Screw Compressor-Major OH with OEM.                                      |
| 7  | Pelletizer Motor Black                    | 5MM-5311   | Removal and reinstallation.                                              |
| 8  | Gear Reducer/Planetary Gear Box.          | 5P-5311    | Planetary GB Major OH with OEM                                           |
| 9  | Pelletizer Motor Black                    | 5MM-5311   | Removal and Reinstallation                                               |
| 10 | Gear Black Motor(5TR-603B)                | 5PM-5311   | Removal and Reinstallation                                               |
| 11 | Refrigeration Compressor unit Motor       | 5KM-6101A  | Removal and Reinstallation                                               |
| 12 | Refrigeration Compressor unit Motor       | 5KM-6101B  | Removal and Reinstallation                                               |
| 13 | Black Line Extruder Motor                 | 5EXM-5301  | Removal and Reinstallation                                               |
| 14 | Scaffolding for Palletizer                | 5Z-9005A-4 | Installation and removal of Scaffolding                                  |
| 15 |                                           | 5Z-9005B-4 | Installation and removal of Scaffolding                                  |
| 16 |                                           | 5Z-9005C-4 | Installation and removal of Scaffolding                                  |
| 17 |                                           | 5Z-9005D-4 | Installation and removal of Scaffolding                                  |

➤ **REMOVAL AND REINSTALLATION OF ELECTRICAL MOTORS (31Nos).**

| S.No. | Tag No.   | Equipment Description                     |
|-------|-----------|-------------------------------------------|
| 1     | 5KM-2201  | DRYG NITROGEN CCT COMP 2ND ST 5VFD- 613-1 |
| 2     | 5KM-2202  | DRYING NITROGEN CCT COMPRESSOR 2ND STAGE  |
| 3     | 5KM-3201  | RECYCLE GAS COMPRESSOR MOTOR              |
| 4     | 5KM-3501  | CRACKER GAS COMPRESSOR MOTOR              |
| 5     | 5MXM-1201 | FIRST FLASH VESSEL PUMP MOTOR             |
| 6     | 5MXM-1202 | 2nd REACTOR AGITATOR MOTOR                |
| 7     | 5MXM-1301 | DECANTER FEED VESSEL AGITATOR             |
| 8     | 5MXM-3402 | DISTILLATION VESSEL AGITATOR MOTOR        |
| 9     | 5PM-1105  | FLUSHING HEXANE PUMP MOTOR                |
| 10    | 5PM-1201A | FIRST REACTOR OUTER COOLER PUMP MOTOR     |
| 11    | 5PM-1201B | FIRST REACTOR OUTER COOLER PUMP MOTOR     |
| 12    | 5PM-1202A | SECOND REACTOR OUTER COOLER PUMP          |
| 13    | 5PM-1202B | SECOND REACTOR OUTER COOLER PUMP          |
| 14    | 5PM-1203A | THIRD REACTOR OUTER COOLER PUMP MOTOR     |
| 15    | 5PM-1203B | THIRD REACTOR OUTER COOLER PUMP MOTOR     |
| 16    | 5PM-1204A | FIRST FLASH VESSEL PUMP MOTOR             |

|    |           |                                         |
|----|-----------|-----------------------------------------|
| 17 | 5PM-1205A | 2nd FLASH VESSEL PUMP MOTOR             |
| 18 | 5PM-1208  | FIRST REACTOR COOLING WATER PUMP MOTOR  |
| 19 | 5PM-1209  | 2nd REACTOR COOLING WATER PUMP MOTOR    |
| 20 | 5PM-1302A | FIRST FLASH VESSEL PUMP MOTOR           |
| 21 | 5PM-1302S | DECANTER FEED PUMP MOTOR                |
| 22 | 5PM-2201A | NITROGEN SCRUBBER REFLUX PUMP MOTOR     |
| 23 | 5PM-3104  | SEPARATION DRUM 5V-3104 PUMP MOTOR      |
| 24 | 5PM-6111A | LUBE OIL PUMP FOR 5K-6101A MOTOR        |
| 25 | 5PM-6111B | LUBE OIL PUMP FOR 5K-6101B MOTOR        |
| 26 | 5RFM-2201 | FIRST FLASH VESSEL PUMP MOTOR           |
| 27 | 5RFM-2202 | DRYER CYCLONE (2ND STAGE) ROTARY FEEDER |
| 28 | 5RFM-2203 | ROTARY FEEDER DRYER OUTLET MOTOR        |
| 29 | 5RFM-2205 | POWDER DRYING ROTARY FEEDER MOTOR       |
| 30 | 5W-5221A  | SCREW FEEDER                            |
| 31 | 5W-5221B  | AGITATOR MOTOR                          |

- 4) Company : SAUDI KAYAN  
Project : Overhauling of JSW Extruders PP TAM March 2021.  
Manpower : 15 Nos  
Contact Person : Abdulrazzaq A. Al-Omari- Manager LDPE/PP Area.

| S# | EQUIPMENT     | ACTIVITIES                                                     | NO. OF UNITS |
|----|---------------|----------------------------------------------------------------|--------------|
| 1  | Extruder- JSW | Pelletizer and Diverter, Die plate replacement and Overhauling | 1            |

- 5) Company : TASNEE  
Project : ROTATING CONTRACTOR AA TAM March 2021.  
Manpower : 45 No's  
Contact Person : Mr. Ziyad Al Zahrani – Mechanical Maintenance Supervisor.

| S# | EQUIPMENT                                                         | ACTIVITIES           | NO. OF UNITS |
|----|-------------------------------------------------------------------|----------------------|--------------|
| 1  | MHI- Horizontal Split Multistage Centrifugal Compressor-10-K-1001 | Complete Overhauling | 1            |
| 2  | Compressors Drive Turbines- 10-KT-1001                            | Complete Overhauling | 1            |

- 6) Company : SABIC- SHARQ

Project : KOBELCO Extruder Maintenance Services PE 3&4 Line#2 TAM March-2021  
Manpower : 48 No's  
Contact Person : Mr. AlAsmari, Amer Ali- TAM Senior Manager

| S# | EQUIPMENT         | ACTIVITIES           | NO. OF UNITS |
|----|-------------------|----------------------|--------------|
| 1  | KOBELCO- Extruder | Complete Overhauling | 1            |

7) Company : SABIC- SAMAC  
Project : JSW Extruder Maintenance Services TAM January-2021  
Manpower : 24 No's  
Contact Person : Mr. Buhliqa Talal- Lead Engineer- TAM

| S# | EQUIPMENT     | ACTIVITIES           | NO. OF UNITS |
|----|---------------|----------------------|--------------|
| 1  | JSW- Extruder | Complete Overhauling | 1            |

8) Company : AR-RAZI  
Project : Rotating Equipment Services- PLANT III TAM FEB-2021  
Manpower : 80 No's  
Contact Person : Mr. GHAMDI AL UBOUD- Manager- TAM

| SL # | TAG #        | EQUIPMENT                      | ACTIVITIES             |
|------|--------------|--------------------------------|------------------------|
| 1    | K-3301 LP    | Synthesis Gas Compressor LP    | Major Overhauling      |
| 2    | K-3301 HP    | Synthesis Gas Compressor HP    | Major Overhauling      |
| 3    | K-3301T      | Synthesis Gas Turbine          | Major Overhauling      |
| 4    |              |                                |                        |
| 5    | K-3101       | Natural Gas Booster Compressor | Major Overhauling      |
| 6    | K-3101T      | Natural Gas Booster Turbine    | Major Overhauling      |
| 7    | K-3302       | Circulator Compressor          | Major Overhauling      |
| 8    | K-3302T      | Circulator Turbine             | Minor Overhauling      |
| 9    | K-3301-P1A-T | Lub Oil Pump Turbine           | Protective Testing     |
| 10   |              | Lub Oil Tank                   | Cleaning & Replacement |
| 11   | P-3621A      | BFW Pump                       | Major Overhauling      |
| 12   | K-3621-AT    | BFW Turbine                    | Minor Overhauling      |
| 13   | P-3622A      | BFW Pump                       | Major Overhauling      |
| 14   | K-3622-AT    | BFW Turbine                    | Major Overhauling      |
| 15   | B-3620-K1TB  | Fan Turbine                    | Major Overhauling      |
| 16   |              | Fan Clutch                     | Major Overhauling      |
| 17   | K-3201       | ID Fan                         | Major Overhauling      |



|    |         |                 |                   |
|----|---------|-----------------|-------------------|
| 18 |         | ID Fan Clutch   | Major Overhauling |
| 19 | K-3201T | ID Fan Turbine  | Minor Overhauling |
| 20 | K-3202  | FD Fan          | Major Overhauling |
| 21 |         | FD Fan Clutch   | Major Overhauling |
| 22 | K-3202T | FD Fan Turbine  | Major Overhauling |
| 23 |         | FD Fan Gear Box | Minor Inspection  |

- 9) Company : SAUDI KAYAN  
Project : Emergency Shutdown- LDPE Extruder Services June-2020.  
Manpower : 15Nos  
Contact Person : Fahad G Al-Dhawi- Manager Polymer Area  
Maintenance.

| S# | EQUIPMENT               | ACTIVITIES                              | NO. OF UNITS |
|----|-------------------------|-----------------------------------------|--------------|
| 1  | Extruder- Krauss Maffei | Extruder Die plate and Mesh Replacement | 1            |

- 10) Company : SABIC- SAMAC  
Project : JSW Extruder Maintenance Services TAM April-2020  
Manpower : 15No's  
Contact Person : Mr. Buhliqa Talal- Lead Engineer- TAM

| S# | EQUIPMENT     | ACTIVITIES           | NO. OF UNITS |
|----|---------------|----------------------|--------------|
| 1  | JSW- Extruder | Complete Overhauling | 1            |

- 11) Company : SADARA  
Project : PE1TA20-CRE Support Services March-2020.  
Manpower : 60 Nos  
Contact Person : AHMED AL MOHAINI

| S# | EQUIPMENT                    | ACTIVITIES                               | NO. OF UNITS |
|----|------------------------------|------------------------------------------|--------------|
| 1  | Reciprocating Gas Compressor | Major Overhauling                        | 1            |
| 2  | Spin dryer Blower            | Inspection and change screen             | 1            |
| 3  | Loop Screw Pump              | 60M PM and pump replacement if required. | 1            |
| 4  | Furnace Blower               | 60M Inspection of Furnace Blower         | 1            |
| 5  | Gear Reducer                 | Inspection removal of v-groove adjuster  | 1            |
| 6  | Lube Oil Pump                | Internal Inspection and Alignment        | 4            |
| 10 | Refrigerator Compressor      | Overhauling                              | 1            |

|    |                        |                                                    |   |
|----|------------------------|----------------------------------------------------|---|
| 11 | Classifier             | Classifier Inspection & Change Screen              | 1 |
| 12 | Pelletizer / Die plate | Die plate replacement and removal of knife carrier | 1 |

- 12) Company : SAUDIKAYAN  
Project : MACHINERY SERVICES PC PLANT – SD Feb-2020.  
Manpower : 175 Nos  
Contact Person : GHONEMANAL, ABDULLAH AHMED  
Manager TAM

| S# | EQUIPMENT     | ACTIVITIES                                   | NO. OF UNITS |
|----|---------------|----------------------------------------------|--------------|
| 1  | Extruder      | Major Overhauling                            | 3 Nos        |
| 2  | Agitators     | Major Overhauling                            | 11 Nos       |
| 3  | Blowers       | Major Overhauling                            | 11 Nos       |
| 4  | Pelletizer    | Major Overhauling                            | 4 Nos        |
| 5  | Pump          | Major Overhauling/Removal and reinstallation | 11 Nos       |
| 6  | Rotary Feeder | Major Overhauling/Removal and reinstallation | 6 Nos        |

- 13) Company : SAUDIKAYAN  
Project : Machinery Services -PH-AMINS-U&O-TAM-Feb-2020.  
Manpower : 83 Nos  
Contact Person : GHONEMANAL, ABDULLAH AHMED  
Manager TAM

| S# | EQUIPMENT              | ACTIVITIES                                                        | NO. OF UNITS |
|----|------------------------|-------------------------------------------------------------------|--------------|
| 1  | AGITATOR & GEARBOX     | Agitator Major Overhauling<br>Agitator Gear Box Major Overhauling | 2 Nos        |
| 2  | COMPRESSOR             | PM activity                                                       | 1 Nos        |
| 3  | MIST ELIMINATOR BLOWER | Major Overhauling                                                 | 1 Nos        |
| 4  | BLOWER                 | Major Overhauling                                                 | 1 Nos        |
| 5  | ELEVATOR               | Major Overhauling                                                 | 2 Nos        |
| 6  | MOTOR                  | Replacement and Alignment                                         | 3 Nos        |
| 7  | PUMP                   | Major Overhauling                                                 | 4 Nos        |

- 14) Company : AR-RAZI

Project : PLANT-V TAM March-2020  
Manpower : 110  
Contact Person : Mr. GHAMDI AL UBOUD  
Manager TAM

| S# | EQUIPMENT                   | ACTIVITIES               | NO. OF UNITS |
|----|-----------------------------|--------------------------|--------------|
| 1  | NG Booster Compressor       | Major Overhauling        | 1 Nos        |
| 2  | Synthesis Gas LP Compressor | Major Overhauling        | 1 Nos        |
| 3  | NG Booster Turbine          | Major Overhauling        | 1 Nos        |
| 4  | Synthesis Gas Turbine       | Major Overhauling        | 1 Nos        |
| 5  | Lube Oil Pump Turbine       | Major Overhauling        | 1 Nos        |
| 6  | IDF Turbine                 | Major Overhauling        | 1 Nos        |
| 7  | Lube Oil Pump Turbine       | Major Overhauling        | 1 Nos        |
| 8  | DFW Pump Turbine            | Major Overhauling        | 1 Nos        |
| 9  | BFW Pump Turbine            | Major Overhauling        | 1 Nos        |
| 10 | BFW Pump                    | Major Inspection         | 1 Nos        |
| 11 | DFW Pump                    | Major Inspection         | 1 Nos        |
| 12 | DFW Pump                    | Major Inspection         | 1 Nos        |
| 13 | Main Lube Oil Pump Turbine  | Major Overhaul           | 1 Nos        |
| 14 | Expansion Turbine           | Plug in Unit Replacement | 1 Nos        |
| 15 | LOX Pump                    | Plug in Unit Replacement | 1 Nos        |
| 16 | LOX Pump                    | Plug in Unit Replacement | 1 Nos        |

15) Company : IBN ZAHR  
Project : MAJOR OVERHAULING OF PP1 EXTRUDER LINE#1 TAM Feb- 2020.  
Manpower : 81 Nos  
Contact Person : S Subramanian  
Lead Engineer

| S# | EQUIPMENT                     | ACTIVITIES        | NO. OF UNITS |
|----|-------------------------------|-------------------|--------------|
| 1  | Extruder                      | Major Overhauling | 1 Nos        |
| 2  | Continuous Mixer Gear Reducer | Major Overhauling | 1 Nos        |
| 3  | Melt Diverter Valve           | Major Overhauling | 1 Nos        |
| 4  | Melt Pump                     | Major Overhauling | 1 Nos        |
| 5  | Melt Pump Gear Reducer        | Major Overhauling | 1 Nos        |
| 6  | Startup Diverter Valve        | Major Overhauling | 1 Nos        |
| 7  | Screen Changer                | Major Overhauling | 1 Nos        |
| 8  | Pellet Die Plate              | Replacement       | 1 Nos        |
| 9  | Pelletizer                    | Major Overhauling | 1 Nos        |

|    |                                               |                                                         |       |
|----|-----------------------------------------------|---------------------------------------------------------|-------|
| 10 | Hydraulic Unit Package                        | Major Overhauling                                       | 1 Nos |
| 11 | Mixer & Gearbox Lube Oil Unit                 | Oil Tanks Cleaning, Filters, Hoses And Oils Replacement | 1 Nos |
| 12 | Lube Oil Unit For Melt Pump & MP Gear Reducer | Oil Tanks Cleaning, Filters, Hoses And Oils Replacement | 1 Nos |
| 13 | Hydraulic Oil Reservoir                       | Oil Tanks Cleaning, Filters, Hoses And Oils Replacement | 1 Nos |
| 14 | Hot Oil Unit                                  | Oil Tanks Cleaning, Filters, Hoses And Oils Replacement | 1 Nos |

- 16) Company : SATORP  
Project : Services for Rotating Equipment Packages TAM Feb-2020  
Manpower : 80 Nos  
Contact Person : SACHIN  
CHAUDARY Lead Engineer TAM

| S# | EQUIPMENT                | ACTIVITIES                                               | NO. OF UNITS |
|----|--------------------------|----------------------------------------------------------|--------------|
| 1  | Centrifugal Compressor   | Minor/Major Overhauling                                  | 8 Nos        |
| 2  | Axial Compressor         | Minor Overhauling                                        | 1 Nos        |
| 3  | Reciprocating Compressor | Major Overhauling                                        | 1 Nos        |
| 4  | Gear Box                 | Minor/Major Overhauling                                  | 5 Nos        |
| 5  | Vorecon                  | Minor Overhauling and Removal, Shifting and installation | 2 Nos        |
| 6  | Steam Turbine            | Minor Overhauling                                        | 3 Nos        |
| 7  | Blower                   | Minor Overhauling                                        | 6 Nos        |
| 8  | Pumps                    | Minor/Major Overhauling and replacement                  | 7 Nos        |
| 9  | Mixer                    | Minor Overhauling                                        | 1 Nos        |
| 10 | Hydraulic Head           | Major Overhauling                                        | 4 Nos        |

- 17) Company : MAADEN PHOSPHATE  
Project : MAJOR OVERHAULING OF SIEMENS BLOWER & SULZER BFW PUMP SERVICES DURING SAP TRAIN-B TAM NOV- 2019  
Manpower : 38 No's  
Contact Person : Zaheer  
Iqbal



| S# | EQUIPMENT             | ACTIVITIES                                                      | NO. OF UNITS |
|----|-----------------------|-----------------------------------------------------------------|--------------|
| 1  | Air Blower            | Blower major Overhauling.                                       | 1            |
| 2  | Gear Box & Oil System | Gearbox Lube, Oil pump & tank with associated lines and valves  | 1            |
| 3  | Air Blower            | Blower major Overhauling.                                       | 1            |
| 4  | Gear Box & Oil System | Gearbox Lube, Oil pump & tank with associated lines and valves. | 1            |
| 5  | BFW Pump              | Pump Major Overhauling.                                         | 1            |
| 6  | BFW Pump              | Pump Major Overhauling.                                         | 1            |
| 7  | Sulphur Pump          | Pump Removal & installation.                                    | 1            |
| 8  | Sulphur Pump          | Pump Removal & installation.                                    | 1            |
| 9  | Emergency BFW Pump    | Pump Removal & installation.                                    | 1            |
| 10 | Primary Air Fan Pump  | Pump Removal & installation.                                    | 1            |
| 11 | Acid Circulation Pump | Motor & Pump Removal & Installation.                            | 1            |
| 12 | Acid Circulation Pump | Motor & Pump Removal & Installation.                            | 1            |
| 13 | Acid Product Pump     | Motor & Pump Removal & Installation.                            | 1            |

- 18) Company : SABIC- GAS YANBU  
Project : PHASE 1 STATIC TA Nov 2019  
Manpower : 134 Nos  
Contact Person : Mr. Talal M Qadi

| S# | EQUIPMENT                | ACTIVITIES                                                                | NO. OF UNITS |
|----|--------------------------|---------------------------------------------------------------------------|--------------|
| 1  | DCAC Cooler              | Internal cleaning and Replacing of packing material.                      | 1            |
| 2  | EV Cooler                | Internal cleaning and Replacing of packing material.                      | 1            |
| 3  | MSA heat accumulator     | Internal cleaning and Replacing of packing material.                      | 1            |
| 4  | MS absorber A            | Internal cleaning and Replacing of packing material.                      | 1            |
| 5  | MS absorber B            | Internal cleaning and Replacing of packing material.                      | 1            |
| 6  | MAC Inter Stage Cooler 1 | Inspection and cleaning of the internals Inter stage and lube oil coolers | 1            |
| 7  | MAC Inter Stage Cooler 2 | Inspection and cleaning of the internals Inter stage and lube oil coolers | 1            |
| 8  | BAC Inter Stage Cooler 1 | Inspection and cleaning of the internals Inter stage and lube oil coolers | 1            |
| 9  | BAC Inter Stage Cooler 2 | Inspection and cleaning of the internals Inter stage and lube oil coolers | 1            |
| 10 | BAC Inter Stage Cooler 3 | Inspection and cleaning of the internals Inter stage and lube oil coolers | 1            |

|    |                              |                                                                           |   |
|----|------------------------------|---------------------------------------------------------------------------|---|
| 11 | BAC After Cooler             | Inspection and cleaning of the internals Inter stage and lube oil coolers | 1 |
| 12 | BAC-Lube Oil Cooler          | Inspection and cleaning of the internals Inter stage and lube oil coolers | 1 |
| 13 | Refrigerator Unit Evaporator | Inspection and cleaning of the internals Inter stage and lube oil coolers | 1 |
| 14 | Refrigerator Unit Condenser  | Inspection and cleaning of the internals Inter stage and lube oil coolers | 1 |
| 15 | MAC Lube Oil Cooler          | Inspection and cleaning of the internals Inter stage and lube oil coolers | 1 |

- 19) Company : SABIC- SAUDI KAYAN  
Project : JSW Extruder Line 1 &2 Overhauling and Cleaning Services, Nov-2019  
Manpower : 45No's  
Contact Person : Mr. Fahad Dhawi  
Maintains Manager PP

| S# | EQUIPMENT       | ACTIVITIES                                         | NO. OF UNITS |
|----|-----------------|----------------------------------------------------|--------------|
| 1  | Extruder Line 2 | Screw replacement, DV & Pelletizer Overhauling     | 1            |
| 2  | Extruder Line 1 | Gland Packing Replacement & Pelletizer Overhauling | 1            |

- 20) Company : SABIC- SAMAC  
Project : JSW Extruder Maintenance Services TAM June-2019  
Manpower : 45No's  
Contact Person : Mr. Buhliqa Talal  
Lead Engineer- TAM

| S# | EQUIPMENT     | ACTIVITIES           | NO. OF UNITS |
|----|---------------|----------------------|--------------|
| 1  | JSW- Extruder | Complete Overhauling | 1            |
| 2  | Pelletizer    | Complete Overhauling | 1            |
| 3  | Wilson seal   | Complete Overhauling | 1            |

- 21) Company : SABIC- AR-RAZI  
Project : Rotating equipment services Plant-IV TAM April 2019  
Manpower : 140 No's  
Contact Person : Mr. Ghamdi Al Uboud  
Manager TAM

| S. NO | EQUIPMENT             | ACTIVITIES        | NO OF UNIT # |
|-------|-----------------------|-------------------|--------------|
| 1     | NG Booster-Compressor | Major Overhauling | 1            |
| 2     | NG Booster-Turbine    | Minor Overhauling | 1            |
| 3     | Syn Gas-Compressor    | Minor Overhauling | 1            |

|    |                       |                   |   |
|----|-----------------------|-------------------|---|
| 4  | Syn Gas-Compressor    | Major Overhauling | 1 |
| 5  | Syn Gas-LO Turbine    | Major Overhauling | 1 |
| 6  | Syn Gas-Turbine       | Major Overhauling | 1 |
| 7  | Circulator Compressor | Major Overhauling | 1 |
| 8  | Circulator Turbine    | Major Overhauling | 1 |
| 9  | Fan                   | Minor Overhauling | 1 |
| 10 | Turbine               | Major Overhauling | 2 |
| 11 | Fan                   | Major Overhauling | 1 |

- 22) Company : SABIC- AR-RAZI  
Project : Rotating equipment services Plant-I TAM March 2019  
Manpower : 140 No's  
Contact Person : Mr. Ghamdi Al Uboud  
Manager TAM

| S. No | EQUIPMENT             | SCOPE             | UNIT # |
|-------|-----------------------|-------------------|--------|
| 1     | ID Fan Turbine        | Major Overhauling | 2      |
| 2     | ID Fan                | Minor Overhauling | 2      |
| 3     | Syn Gas Compressor    | Major Overhauling | 3      |
| 4     | Syn Gas Turbine       | Major Overhauling | 2      |
| 5     | Circulator Compressor | Major Overhauling | 1      |
| 6     | Circulator Turbine    | Major Overhauling | 1      |
| 7     | Pump Turbine          | Major Overhauling | 5      |

- 23) Company : SIPCHEM  
Project : Rotary jobs in IGC and IVC TAM MAY 2019  
Manpower : 117 No's  
Contact Person : Mr. Pratik Trivedi  
Contracts Coordinator

| S. No          | EQUIPMENT                            | SCOPE                                            | UNIT # |
|----------------|--------------------------------------|--------------------------------------------------|--------|
| <b>IGC TAM</b> |                                      |                                                  |        |
| 1              | CO LP Centrifugal Compressor         | Major Overhauling                                | 1      |
| 2              | CO HP Centrifugal Compressor         | Major Overhauling                                | 1      |
| 3              | CO HP Centrifugal Compressor Turbine | Major Overhauling                                | 1      |
| 4              | Auxiliary of CO Compressor & Turbine | Major Overhauling                                | 1      |
| 5              | BDO H2 Compressor                    | PM & auxiliary system overhauling                | 1      |
| 6              | Hydrogen Compressor                  | PM & auxiliary system overhauling                | 1      |
| 7              | Hydrogen Compressor                  | Major Overhauling & Auxiliary system overhauling | 1      |
| 8              | Combustion air blower                | Minor Overhauling                                | 1      |
| 9              | Flue gas blower                      | Minor Overhauling                                | 1      |

|                |                                       |                           |   |
|----------------|---------------------------------------|---------------------------|---|
| 10             | CO2 Centrifugal Compressor            | Minor Overhauling         | 1 |
| 11             | Auxiliary of CO2 Compressor           | Major Overhauling         | 1 |
| 12             | NG Centrifugal Compressor             | Major Overhauling         | 1 |
| 13             | Auxiliary of NG Compressor            | Major Overhauling         | 1 |
| <b>IVC TAM</b> |                                       |                           |   |
| 1              | RGC Compressor                        | Major Overhauling         | 1 |
| 2              | RGC Turbine                           | Minor Overhauling         | 1 |
| 3              | Auxiliary of RGC Compressor & Turbine | Major Overhauling         | 2 |
| 4              | VGC Compressor                        | Replacement               | 1 |
| 5              | VGC Turbine & Gearbox                 | Minor & Major Overhauling | 1 |
| 6              | Auxiliary of VGC Compressor & Turbine | Major Overhauling         | 2 |
| 7              | FGC Compressor                        | PM                        | 1 |
| 8              | FGC Turbine                           | PM & Valve Overhauling    | 1 |
| 9              | Auxiliary of FGC Compressor & Turbine | Major Overhauling         | 2 |

24) Company : SABIC- SHARQ  
Project : PE 1 & 2 SD April  
2019  
Manpower : 35 No's  
Contact Person : Mr. Mohammed Ballawi  
Manager PE 1 & 2

| S. No | EQUIPMENT      | SCOPE                                   | UNIT # |
|-------|----------------|-----------------------------------------|--------|
| 1     | VGR Compressor | Overhauling of Reciprocating compressor | 1      |

25) Company : SABIC- IBN RUSHD  
Project : Complex Turnaround March 2019 for Rotating Equipment for PAT, AROMATIC  
Manpower : 350 No's  
Contact Person : Mr. Ramana Kumar Senior  
Lead Engineer- TAM Planning

| S. No | EQUIPMENT                | SCOPE                                                            | UNIT # |
|-------|--------------------------|------------------------------------------------------------------|--------|
| 1     | Agitator                 | Internal Ins. & PM, Bearing Insp & Repl., Mech Seal Replace & OH | 27     |
| 2     | Screw Conveyor           | Major Inspection, GB PM                                          | 9      |
| 3     | CTA Dryer                | Major Inspection                                                 | 1      |
| 4     | Rotary Vacuum Filter     | Major Overhauling                                                | 4      |
| 5     | Feed Mixture Auto Filter | Major Overhauling, GB PM                                         | 1      |
| 6     | Process Air Compressor   | Minor Overhauling                                                | 2      |
| 7     | Grease Pump              | Minor Inspection, GB PM                                          | 5      |
| 8     | Oil Pump                 | Minor Inspection                                                 | 2      |
| 9     | Combustion Air Blower    | Minor Overhauling                                                | 1      |



|    |                            |                                         |   |
|----|----------------------------|-----------------------------------------|---|
| 10 | Auto Crusher               | Major Overhauling, GB PM                | 1 |
| 11 | PTA Rotary Pressure Filter | Major Overhauling, GB PM                | 2 |
| 12 | PTA DRYER                  | Major Inspection, GB PM                 | 2 |
| 13 | Blower                     | Bearing & Damper Inspection/Replacement | 4 |
| 14 | Rotary Valve               | Major Overhauling                       | 2 |
| 15 | Blower Damper              | Bearing Replacement                     | 4 |
| 16 | KAWASKI Compressor         | Major Overhauling                       | 2 |
| 17 | SNM Turbine                | Major Overhauling                       | 2 |

26) Company : SABIC- IBN RUSHD  
Project : Complex Turnaround March 2019 for Rotating Equipment for PET,  
Utility Manpower : 150 No's  
Contact Person : Mr. Ramana Kumar  
Senior Engineer TAM

| S. No | EQUIPMENT                  | SCOPE                                                     | UNIT # |
|-------|----------------------------|-----------------------------------------------------------|--------|
| 1     | Agitator Drive (Paste Mix) | PM, Replace Gland packing, GB PM                          | 2      |
| 2     | Dosing Balance             | PM, Replace Tooth Belt                                    | 2      |
| 3     | Pellet Cooler              | Rotating Plate Inspection, Drive Bearing Inspection/Repl. | 2      |
| 4     | Agitator Drive DC          | Major Overhauling, GB PM                                  | 4      |
| 5     | Radial Fan                 | Major Overhauling                                         | 6      |
| 6     | Rotary Valve               | Major Overhauling                                         | 9      |
| 7     | Polymer Discharge Pump     | Major Overhauling, GB PM                                  | 2      |
| 8     | Pump                       | Major Overhauling                                         | 2      |
| 9     | MHI Lube Oil Pump          | Major Overhauling                                         | 1      |
| 10    | Scraper                    | PM, Mech. Seal Inspection, Bearing Repl., GB PM           | 5      |

27) Company : TASNEE  
Project : Overhauling of Product Comp LP-1 Casing - PDH - TAM –  
2019 Duration : March 2019 (16 Days)  
Manpower : 210 No's  
Contact Person : Mohammed Fakruddin  
Specialist III, Service & Project

| S# | Equipment                  | Make | Activities                                     | No. of Units |
|----|----------------------------|------|------------------------------------------------|--------------|
| 1  | Product Gas Compressor LP1 | MHI  | Complete overhauling, Dry Gas seal replacement | 1            |
| 2  | Propylene Compressor       | MHI  | Complete overhauling, Dry Gas seal replacement | 1            |

|   |                                       |     |                                                |   |
|---|---------------------------------------|-----|------------------------------------------------|---|
| 3 | Product Gas Compressor Drive Turbines | MHI | Complete overhauling includes governing system | 1 |
| 4 | Propylene Compressor Drive Turbines   | MHI | Complete overhauling includes governing system | 1 |

- 28) Company : TASNEE  
Project : MANTURBO Comp and OH PDH-TAM-2019  
Duration : March 2019 (16 Days)  
Manpower : 40 No's  
Contact Person : Mohammed Fakruddin  
Specialist III, Service Project

| S# | Equipment                                          | Activities                       | No. of Units |
|----|----------------------------------------------------|----------------------------------|--------------|
| 1  | Horizontal Split Multistage Centrifugal Compressor | Major Overhauling and Inspection | 1            |
| 2  | Gear Box                                           | Major Overhauling and Inspection | 1            |
| 3  | Lube oil Pumps                                     | Overhauling and Inspection       | 3            |
| 5  | Air Intake & Ventilation Filters                   | Overhauling and Inspection       | 1150         |

- 29) Company : TASNEE  
Project : Rotating Equipment Services -PP TAM 2019  
Duration : March 2019 (15 Days)  
Manpower : 185 No's  
Contact Person : Saba  
Karim

Engineer III, Maintenance

| S# | Equipment                       | Activities         | No. of Units |
|----|---------------------------------|--------------------|--------------|
| 1  | Extruder                        | Major Overhauling  | 2            |
| 2  | Extruder Gear Box               | Major Overhauling  | 2            |
| 3  | Polymerization Agitator         | Bearing Insp/Repl. | 4            |
| 4  | Polymerization Agitator Gearbox | Major Overhauling  | 4            |
| 5  | Discharge Vessel Agitator       | Bearing Insp/Repl. | 1            |
| 6  | Purge Vessel Agitator           | Bearing Insp/Repl. | 3            |
| 7  | Disc. Vessel Agitator Gearbox   | Major Overhauling  | 1            |
| 8  | Purge Vessel Agitator Gearbox   | Major Overhauling  | 3            |
| 9  | Rotary Feeder                   | Major Overhauling  | 14           |
| 10 | Cooling Fan                     | Major Overhauling  | 1            |
| 11 | Screw Compressor                | Major Overhauling  | 1            |
| 12 | C3 Splitter Compressor          | Major Overhauling  | 1            |

|    |                                |                      |         |
|----|--------------------------------|----------------------|---------|
| 13 | Recycle Pump                   | Major Overhauling    | 6       |
| 14 | Catalyst Solution Recycle Pump | Major Overhauling    | 8       |
| 15 | Tea Metering Pump              | Major Overhauling    | 5       |
| 16 | Motors Removal & Installation  | Removal/Installation | 60 Nos. |

- 30) Company : TASNEE  
Project : Rotating Equipment works for Butanol Tam-2019  
Duration : February 2019 (13 Days)  
Manpower : 112No's  
Contact Person : Saad Amoodi  
Specialist, CM - Services & Projects

| S# | Equipment                                            | Make         | Activities                                                 | No.ofUnits |
|----|------------------------------------------------------|--------------|------------------------------------------------------------|------------|
| 1  | CO compressor- 6 Stage Integrally Geared Compressor  | KOBELCO      | Complete overhauling include all stage DG seal replacement | 1          |
| 2  | CO2 Compressor- 5 Stage Integrally Geared Compressor | KOBELCO      | Complete overhauling include all stage DG seal replacement | 1          |
| 3  | BVOH Compressor                                      | Dresser Rand | DG seal replacement and bearing inspection                 | 1          |
| 4  | BVOH Compressor Drive turbine                        | Dresser Rand | Bearing inspection                                         | 1          |

- 31) Company : SADARA  
Project : Rotating Equipment works for CHEM 3 TAM  
2019 Duration : February 2019 (8 Days)  
Manpower : 50 No's  
Contact Person : Rajesh P. Rajagopalan  
Contract Specialist – Procurement C&AS

| S# | Equipment                      | Make   | Activities                             | No. of Units |
|----|--------------------------------|--------|----------------------------------------|--------------|
| 1  | Ammonia Compressor             | NEA    | Complete overhauling                   | 1            |
| 2  | Vertical Pump and its Gear Box | Sulzer | Complete Overhauling and GB Inspection | 2            |

- 32) Company : SIPCHEM  
Project : OVERHAUL CTG TRAIN  
Duration : January 2019 (23Days)  
Manpower : 65 No's  
Contact Person : Shoaib Nizamuddin  
Buyer

| S# | Equipment             | Make                      | Activities                                                         | Unit# |
|----|-----------------------|---------------------------|--------------------------------------------------------------------|-------|
| 1  | Axial flow compressor | Man Turbo AG80/10. V2.I.3 | Major Overhauling, including Grit blasting of rotor and diaphragms | 1     |

|   |                                                 |                              |                                                                       |   |
|---|-------------------------------------------------|------------------------------|-----------------------------------------------------------------------|---|
| 2 | Steam Turbine                                   | Man Turbo<br>DK080/ 130E1    | Major Overhauling, including Grit<br>blasting of rotor and diaphragms | 1 |
| 3 | H2 Compressor<br>integrally geared, 1<br>stages | Atlas Copco, GT-<br>40- T1D1 | Overhaul And Dry Gas Seal<br>Replacement                              | 1 |

- 33) Company : MAADEN PHOSPHATE  
Project : Overhauling of Rotating Equipment's in SAP Plant.  
Duration : December 2018 (15 Days)  
Manpower : 32 No's  
Contact Person : Mohammad Masoom Reza  
Sr. Engineer, Planning-Maintenance

| S# | EQUIPMENT             | ACTIVITIES               | NO. OF UNITS |
|----|-----------------------|--------------------------|--------------|
| 1  | Air Blower            | Major Overhauling        | 2            |
| 2  | BFW Pumps             | Major Overhauling        | 2            |
| 3  | Sulfur Pumps          | Removal and Installation | 2            |
| 4  | Acid Circulation Pump | Removal and Installation | 2            |
| 5  | Acid Product Pump     | Removal and Installation | 1            |
| 6  | Primary Air Fan       | Removal and Installation | 1            |

- 34) Company : SABIC- IBN ZAHR  
Project : Overhauling of Extruder and its components  
Duration : December 2018 (20 Days)  
Manpower : 120No's  
Contact Person : Mohammad Abdul Khader  
TA Planner

| S# | Equipment              | Make       | Activities           | No. of Units |
|----|------------------------|------------|----------------------|--------------|
| 1  | Extruder               | KOBELCO    | Complete Overhauling | 1            |
| 2  | Gear Box               | ISHIBASHI  | Complete Overhauling | 1            |
| 3  | Pelletizer             | KOBELCO    | Complete Overhauling | 1            |
| 4  | Gear Pump and Gear Box | KOBELCO    | Complete Overhauling | 1            |
| 5  | VRC Compressor         | Burckhardt | Complete Overhauling | 1            |

- 35) Company : SABIC- SAMAC  
Project : Overhauling of Extruder



Duration : November 2018 (16 Days)  
Manpower : 40 No's  
Contact Person : Buhliqa  
Talal

Rotating Engineer

| S# | Equipment             | Make | Activities           | No. of Units |
|----|-----------------------|------|----------------------|--------------|
| 1  | Extruder and Gear Box | JSW  | Complete Overhauling | 1            |
| 2  | Gear Box              | ABEX | Complete Overhauling | 1            |

36) Company : SABIC/ SHARQ  
Project : Overhauling of Vertical Pump  
Duration : November 2018 (7 Days)  
Manpower : 12 No's  
Contact Person : Jayamitra  
Suna

Rotating Engineer

| S# | Equipment             | Make   | Activities           | No. of Units |
|----|-----------------------|--------|----------------------|--------------|
| 1  | Ethylene Product Pump | Sulzer | Complete Overhauling | 1            |

37) Company : SABIC/GASYANBU  
Project : Overhauling of Rotating Equipment in Phase III during TAM  
2018 Duration : November 2018 (20 Days)  
Manpower : 66No's  
Contact Person : Rama K. Sahoo  
T/A Mechanical Planning Engineer

| S# | Equipment                                            | Make        | Activities           | No. of Units |
|----|------------------------------------------------------|-------------|----------------------|--------------|
| 1  | Booster Air Compressor 52-K-004                      | SIEMENS     | Complete Overhauling | 1            |
| 2  | DFE 52-ET-002                                        | CRYOSTER    | Complete Overhauling | 1            |
| 3  | Expander 52-ET-001                                   | ALTAS COPCO | Complete Overhauling | 1            |
| 4  | LOX Pumps                                            | CRYOSTER    | Complete Overhauling | 2            |
| 5  | Main Air Compressor 3 STAGE Integrally gear52-K- 001 | SIEMENS     | Complete Overhauling | 1            |
| 6  | MOS-MPGAN Compressor 52-K-003                        | ALTAS COPCO | Complete Overhauling | 1            |

|   |                                      |         |                     |   |
|---|--------------------------------------|---------|---------------------|---|
| 7 | Small-Main Air Compressor 52-K-001 A | SIEMENS | Complete Inspection | 1 |
|---|--------------------------------------|---------|---------------------|---|

38) Company : SIPCHEM

Project : SHUTDOWN of IMC plant.  
Duration : September (20 Days)  
Manpower : 25No's  
ContactPerson : AllanNally  
Engineer Rotating Equipment

| S# | Equipment                  | Make            | Activities                                         | No.of Units |
|----|----------------------------|-----------------|----------------------------------------------------|-------------|
| 1  | Combustion Air Fan-10B1201 | DMW CORPORATION | Major Overhauling along with Rotor Refurbishment.  | 1           |
| 2  | Flue Gas Fan-10B1202       | DMW CORPORATION | Major Overhauling along with Rotor Refurbishment.  | 1           |
| 3  | Gearbox-10BZ-1201 and 1202 | RENK MAAG       | Inspection of Gear teeth's and Blue contact check. | 2           |
| 4  | Turbine-10BT1201           | ELLIOTT         | Inspection/Replacement of DE and NDE bearings      | 1           |
| 5  | Turbine-10BT1202           | ELLIOTT         | Major Overhauling                                  | 1           |

39) Company : SHARQ/SABIC

Project : Emergency Shutdown Requirement for Overhauling of Cameron Compressors  
Duration : August 2018 (7 Days)  
Manpower : 25No's  
Contact Person : Mr.Soma S  
Solige MNTC  
Coordinator

| S# | Equipment                         | Activities           | No. of Units |
|----|-----------------------------------|----------------------|--------------|
| 1  | Cameron Compressor 4K2731 A,B & D | Complete Overhauling | 03           |

40) Company : TASNEE

Project : MANTURBO Compressor Bearing Replacement.  
Duration : April 2018  
Manpower : 15No's  
ContactPerson : Saleh M. Al-Ahmari  
Specialist II, Mechanical Maintenance

| S# | Equipment                                | Activities                                        | No. of Units |
|----|------------------------------------------|---------------------------------------------------|--------------|
| 1  | MAN TURBO Regen Air Compressor_1GB-1001A | Inspection and Replacement of DE and NDE Bearing. | 01           |

|   |                         |                    |    |
|---|-------------------------|--------------------|----|
| 2 | MAAG Gear Box_1GG-1001A | Major Overhauling. | 01 |
|---|-------------------------|--------------------|----|

41) Company : GAS/SABIC

Project : Over hauling of Major Rotating Equipment in Phase-VIITAM 2018 Duration : FEB 2018 (25 Days)

Manpower : 160no's

Contact Person : Mr.Saud-Al,SamirSaleh  
TAM Manager

| S# | Equipment                                  | Activities                                         | No. of Units |
|----|--------------------------------------------|----------------------------------------------------|--------------|
| 1  | EXPANSION ATLAS COPCO_71-ET-001-A          | Complete Overhauling                               | 1            |
| 2  | EXPANSION TURBINE 71- ET-001-B             | Installation and Commissioning of new Plug in Unit | 1            |
| 3  | DFE 71-ET-002                              | Installation and Overhauling of new Plug in Unit   | 1            |
|    |                                            | Overhauling and replacement of Gear Box.           |              |
|    |                                            | Inspection and cleaning of Lube Oil System.        |              |
| 4  | Air Compressor Overhauling_71-K-001        | Major Inspection and Overhauling                   | 1            |
| 5  | 71-K-001-A Small Air Compressor_71-K-001-A | Major Inspection and Overhauling                   | 1            |
| 6  | MP GAN Compressor_71-K-003                 | Major Inspection and Overhauling                   | 1            |
| 7  | Booster Air Compressor_71-K-004            | Major Inspection and Overhauling                   | 1            |

42) Company : SABIC/ AL-BAYRONI

Project : Overhauling of Rotating Equipment in 2EHPlantTAM2018 Duration : January 2018 (25Days)

Manpower : 114 no's

Contact erson : Mr. Yousef AbdullahNemer-Al  
Engineer, Mechanical

| S# | EQUIPMENT                       | ACTIVITIES                            | NO. OF UNITS |
|----|---------------------------------|---------------------------------------|--------------|
| 1  | 405J COMBUSTION AIR FAN Package | Removal /Installation and overhauling | 6            |
| 2  | 406J FLUE GAS FAN Package       | Removal /Installation and overhauling | 6            |
| 3  | 413J RECYCLE COMPRESSOR         | Major overhauling                     | 1            |

|    |                                      |                                          |   |
|----|--------------------------------------|------------------------------------------|---|
| 4  | 429J REACTOR 1<br>AGITATOR Package   | Removal /Installation and<br>overhauling | 2 |
| 5  | 430J REACTOR NO2<br>AGITATOR Package | Removal /Installation and<br>overhauling | 2 |
| 6  | 610-J REACTOR AGITATOR               | Removal /Installation and<br>overhauling | 1 |
| 7  | 620-J FINISHING VESSEL AGITATOR      | Removal /Installation and<br>overhauling | 1 |
| 8  | 2052-UJ FORCED<br>DRAFT FAN Package  | Removal /Installation and<br>overhauling | 3 |
| 9  | 2052-JT BOILER FEED PUMP<br>TURBINE  | Removal /Installation and<br>overhauling | 1 |
| 10 | 2251-JA SEA WATER<br>PUMP Package    | Major Overhauling                        | 3 |
| 11 | 2251-JB SEA WATER<br>PUMP Package    | Major Overhauling                        | 2 |

- 43) Company : Contract from SNM Machinery Japan for SAUDIKAYAN  
Project : Turbine and Pump Revamping for Saudi Kayan Olefins  
DBN Project during TAM  
2017  
Duration : November 2017 (20Days)  
Manpower : 50 no's  
Contact Person : Mr. Yousef Saleh  
Manager- AED SaudiKayan

| S# | Equipment | Activities                 | No. of Units |
|----|-----------|----------------------------|--------------|
| 1  | Turbines  | Revamping of PT-12010 A/B  | 2            |
| 2  | Pumps     | Revamping of P-12010 A/B/C | 3            |

- 44) Company : SABIC/ SAUDI KAYAN  
Project : Overhauling of Rotating Equipment in PC Plant TAM  
2017 Duration : November 2017 (25Days)  
Manpower : 120 no's  
Contact Person : Mr. Mohammed Asiri  
Manager- TAM Department

| S# | Equipment      | Activities                             | No. of Units |
|----|----------------|----------------------------------------|--------------|
| 1  | Vacuum Blowers | Removal / Installation and overhauling | 24           |
| 2  | PCS compressor | Overhauling Level C                    | 2            |



|   |                   |             |   |
|---|-------------------|-------------|---|
| 3 | Extruder Gear Box | Inspection  | 1 |
| 4 | Rotary feeder     | Overhauling | 5 |
| 5 | Extruder Coupling | Inspection  | 8 |

- 45) Company : SABIC/ SAUDI KAYAN  
Project : Overhauling of Rotating Equipment in Phenolic Plant  
TAM Duration : November 2017 (25 Days)  
Manpower : 100 no's  
Contact Person : Mr. Mohammed Asiri  
Manager- TAM Department

| S# | Equipment             | Activities                | No. of Units |
|----|-----------------------|---------------------------|--------------|
| 1  | Oxidation Compressor  | Complete overhauling      | 1            |
| 2  | Dust Scraper Conveyor | PM and Chain modification | 2            |
| 3  | ID Fan                | Overhauling               | 1            |

- 46) Company : SABIC/ SAUDI KAYAN  
Project : Overhauling of Rotating Equipment in Olefin Plant TAM  
2017 Duration : November 2017 (25 Days)  
Manpower : 50 no's  
Contact Person : Mr. Mohammed Asiri  
Manager- TAM Department

| S# | Equipment | Activities                             | No. of Units |
|----|-----------|----------------------------------------|--------------|
| 1  | Turbine   | Complete overhauling                   | 3            |
| 2  | Expander  | Removal / Installation and overhauling | 1            |
| 3  | Pump      | Overhauling                            | 1            |

- 47) Company : SABIC/ SAUDI KAYAN  
Project : Overhauling of Extruder in PP Plant TAM 2017  
Duration : November 2017 (15 Days)  
Manpower : 75 no's  
Contact Person : Mr. Fahad Al Dhawi  
Manager- PP Department

| S# | Equipment    | Activities                                 | No. of Units |
|----|--------------|--------------------------------------------|--------------|
| 1  | JSW Extruder | Extruder Overhauling, Gear Box Overhauling | 1            |

- 48) Company : SABIC/ AR-RAZI  
Project : Additional Activities Overhauling of Fin Fans 7 no's Plant-II  
& Overhauling of Turbine K-1202T.  
Duration : October 2017 (10 Days)  
Manpower : 18 no's  
Contact Person : Mr. Ibrahim N Ghanem-Al.

Engineer, Planning  
Central  
Maintenance

| SR # | EQUIPMENT | SOW                                                                                |
|------|-----------|------------------------------------------------------------------------------------|
| 1    | E-1503-1A | Oil seal leak & fan shaft upper and bottom bearings abnormal play                  |
| 2    | E-1503-2A | Upper bearing abnormal play                                                        |
| 3    | E-1503-1M | Oil seal heavy leak                                                                |
| 4    | E-1503-3A | 2 blade shanger connecting rod damage need to replace & actuator air inlet linocut |
| 5    | E-1306-5  | Oil seal Leak in the gearbox input shaft                                           |
| 6    | E-1306-8  | Oil seal Leak in the gearbox input shaft                                           |
| 7    | E-1306-1  | Oil seal Leak in the gearbox input shaft                                           |
| 8    | K-1202T   | Complete Overhauling of Turbine                                                    |

49) Company : TASNEE  
Project : Major Overhauling of Product Compressor (LP1 and HP)  
Duration : MAY 2017 (10 Days)  
Manpower : 63 no's  
Contact Person : Mr. Saba Karim  
Engineer II, Maintenance

| SR # | EQUIPMENT                           | MODEL / MANUFACTURE | SOW              |
|------|-------------------------------------|---------------------|------------------|
| 1    | Product Gas HP Compressor Feed Gas  | 11H-6B / MHI        | Major inspection |
| 2    | Product Gas LP1 Compressor Feed Gas | 11H-3 / MHI         | Major inspection |

50) Company : SABIC/ ARRAZI  
Project : LSTK Jobs-Overhauling of Rotating Equipment  
Duration : April 2017 (22 Days)  
Manpower : 135 no's  
Contact Person : Mr. Ghamdi  
Al. Uboud Manager-  
Turn Around

| SR # | EQUIPMENT                         | MODEL / MANUFACTURER | SOW              |
|------|-----------------------------------|----------------------|------------------|
| 1    | Centrifugal NG Booster Compressor | 5V-6 / MHI           | Major inspection |
| 2    | Centrifugal Syn Gas Compressor LP | 5V-5 / MHI           | Major inspection |

|    |                                                             |               |                                       |
|----|-------------------------------------------------------------|---------------|---------------------------------------|
| 3  | Centrifugal Syn Gas Compressor HP                           | 5V-5C/ MHI    | Bearing Inspection & DGS Replacements |
| 4  | Condensing Turbine for NG Booster Compressor                | 5CL-6 / MHI   | PM                                    |
| 5  | High Pressure Both end drive Turbine for Syn Gas Compressor | 5EH-7BD / MHI | Major OH Including Rotor replacement  |
| 6  | Turbine for Pumps                                           | CL-225 /MHI   | Protective System Testing             |
| 7  | Turbine for Pumps                                           | CL-225 /MHI   | Protective System Testing             |
| 8  | Turbine for Pumps                                           | CL-225 /MHI   | Protective System Testing             |
| 9  | Turbine for Pumps                                           | CL-225 /MHI   | Protective System Testing             |
| 10 | Turbine for Pumps                                           | CL-216/ MHI   | Protective System Testing             |
| 11 | Fan                                                         |               | Bearings Inspection, Train Alignment  |

51) Company : TASNEE Petrochemical - Jubail  
 Project : LSTK Jobs-Overhauling of Rotating Equipment LDPE Plant  
 Duration : May 2017 (22Days)  
 Manpower : 85 no's  
 Contact Person : Mr. Mohammed H.Quraishi  
 TAM Mechanical Planner  
 (C) Central Maintenance Services

| SR # | EQUIPMENT   | MODEL / MANUFACTURER                         | NUMBER OF EQUIPMENT |
|------|-------------|----------------------------------------------|---------------------|
| 1    | Pump        | Reciprocating Pump/Dossing Pumps             | 7                   |
| 2    | Gear Box    | Main Extruder GB/Satellite Extruder Gear Box | 3                   |
| 3    | Accumulator | Accumulator for Melt feed valve              | 3                   |
| 4    | Compressor  | Nitrogen Compressor/ Booster Compressor      | 2                   |
| 5    | Drier       | Pellet Drier                                 | 1                   |
| 6    | Pelletizer  | Main extruder(melt feed valve)               | 2                   |
| 7    | Motor       | Removal and Installation                     | 18                  |

52) Company : SAHARA Petrochemical Company - Jubail  
 Project : LSTK Jobs-Overhauling of Extruder Gear Box RENK  
 Duration : March 2017 (20Days)  
 Manpower : 63 no's  
 Contact Person : Mr. Abbas. T.Vapputty  
 Specialist - Mechanical Maintenance

### Department

| SR # | EQUIPMENT              | MODEL / MANUFACTURER | NO. OF EQUIPMENT | SOW               |
|------|------------------------|----------------------|------------------|-------------------|
| 1    | Extruder Gear Box RENK | #SUPREX 316R356      | 1                | Major Overhauling |

53) Company : SAUDI CHEVRON PHILIP(SCHEM)  
Project : LSTKJobs- Overhauling and PM of Rotating Equipment.  
Duration : March 2017 (20Days)  
Manpower : 135 no's  
Contact Person : Mr. Madhava Rao  
Supervisor

| SR# | EQUIPMENT                      | MAKE                               | EQUIP# | SOW                     |
|-----|--------------------------------|------------------------------------|--------|-------------------------|
| 1   | Fin Fans                       | CHECO 12F33 / GEA                  | 44     | OH                      |
| 2   | Recycle Gas Compressor         | 60MB7 /ELLIOTT                     | 1      | PM                      |
| 3   | Recycle Gas Compressor-Turbine | ELLIOTT                            | 4      | PM                      |
| 4   | Low Pressure Separator Pump    | 150X100x5M40 / EBARA               | 2      | PM                      |
| 5   | Net Gas Compressor             | ELLIOTT                            | 2      | PM                      |
| 6   | FD Fan                         | HDL1085L-39A7SCWTH / BUFFALO FORGE | 1      | PM / Bearing Inspection |
| 7   | FD Fan Turbine                 | ELLIOTT                            | 1      | PM/ Governor Inspection |
| 8   | FGR Fan                        | HDL1085/BUFFALO FORGE              | 1      | PM / Bearing Inspection |
| 9   | FGR Turbine                    | ELLIOTT                            |        | PM                      |
| 10  | Lube oil Pumps                 | B3D BRST-337 / IMO                 | 2      | PM                      |
| 11  | Stripper Bottoms Pump          | CD (1) Stage / SULZER              | 2      | PM                      |
| 12  | Boiler Feed Water Pump         | 150SPD 5M / EBARA                  | 3      | PM                      |
| 13  | BoilerFeedWaterPump Turbine    | ELLOITT                            | 2      | PM                      |
| 14  | Generator                      | ABB / AMG 450S4                    | 1      | PM                      |
| 15  | Generator Turbine              | ELLIOTT/CYPPG(P)TTT                | 1      | PM                      |
| 16  | Pump around Pump               | LAWERNCE-USA / AACL                | 2      | PM /OH                  |
| 17  | Aromax Feed Pump               | SULZER / OHH                       | 2      | PM                      |

54) Company : SABIC/ SAUDIKAYAN  
Project : LSTK Jobs- Rotating Equipment's  
Maintenance Service Shutdown HDPE Plant 2017  
Duration : January 2017 (17Days)  
Manpower : 56 no's  
Contact Person : Mr. Mohammad MAI-Ghamdi  
Manager, HDPE Maintena

| SR # | EQUIPMENT           | MANUFACTURER / MODEL                                       | NO. OF EQUIP |
|------|---------------------|------------------------------------------------------------|--------------|
| 1    | Reactor Agitator    | AG-26122, AG-26124, AG-26442, AG-26121, AG-26123           | 5            |
| 2    | Centrifuge Decanter | CF-26211A, CF-26211B, CF-26211D, CF-26211C.                | 4            |
| 3    | Centrifugal Blower  | BL-26221, BL-26222                                         | 2            |
| 4    | Screw Compressor    | K-26223A, K-26223B, K-26342A, K-26342B, K-26342C, K-26911A | 6            |
| 5    | Slurry Pump         | P-26121B                                                   | 1            |
| 6    | Rotary Feeder       | RF-26223, RF-26225, RF-26333.                              | 3            |

55) Company : Saudi Chevron Philip (SCHEM) - Jubail  
Project : LSTK Jobs- Overhauling of 3 Coperion Make extruder.  
Duration : October 2016 (30Days)  
Manpower : 156 no's  
Contact Person : Mr. T. R. Barry  
Specialist, Rotating  
Equipment Maintenance  
Department

| SR # | EQUIPMENT                | MANUFACTURER / MODEL | NO. EQUIP | SOW                                                             |
|------|--------------------------|----------------------|-----------|-----------------------------------------------------------------|
| 1    | Extruder                 | Coperion / VT 380    | 2         | Overhauling and replace preassembled screws and barrel assembly |
| 2    | Extruder                 | Coperion / VT 350    | 1         | Overhauling and inspection of Extruder screws                   |
| 3    | Gear Box Extruder VT 380 | Superx / 316R356 A   | 1         | Overhauling                                                     |
| 4    | Gear Box Extruder VT 350 | Flender / 292F200    | 1         | Overhauling                                                     |
| 5    | Pelletizer               | Coperion / UG 1000   | 2         | Overhauling                                                     |
| 6    | Pelletizer Gear Box      | Coperion / 42 X 80   | 2         | Overhauling                                                     |



56) Company : SABIC/ SAFCO  
Project : IBBS TA 16 Urea Rotating Equipment Services  
Duration : November 2016 (22Days)  
Manpower : 62 no's  
Contact Person : Mr. Anand K Dugar  
Senior Planning Engineer

| SR # | EQUIPMENT        | MANUFACTURER / MODEL                    | NUMBER OF EQP | SOW                   |
|------|------------------|-----------------------------------------|---------------|-----------------------|
| 1    | C02 Turbine      | ENK40/45/NUVOPIGNONE                    | 1             | Major OH              |
| 2    | HP/LP Compressor | 2BCL 306/A , 2MCL 806 /<br>NUVO PIGNONE | 2             | Bearing<br>Inspection |
| 3    | Gearbox          | GN – 25 / MAAG                          | 1             | OH                    |
| 4    | Ammonia Turbine  | 5EH-7BD/MHI/NK32/45-3<br>/ FUJI         | 2             | Bearing<br>Inspection |

57) Company : SABIC/ SAUDI KAYAN  
Project : POLYCARBONATE-TA-2016  
Duration : April–May2016(35 Days)  
Manpower : 156 no's  
Contact Person : Mr.Ramesh  
Senior Planning Engineer

| SR # | EQUIPMENT  | MANUFACTURER / MODEL            | NUMBER OF EQP | SOW                            |
|------|------------|---------------------------------|---------------|--------------------------------|
| 1    | Agitator   | EKATO HWL2180 N                 | 1             | Major OH (Seal<br>Replacement) |
| 2    | Blower     | CALLIDUS, JOHN ZINK             | 6             | Minor OH                       |
| 3    | Compressor | Howden Screw Comp , Mycom Screw | 6             | Major OH                       |
| 4    | Pelletizer | RIETER                          | 8             | Major OH                       |
| 5    | Extruder   | JSW TEX 140α - 17.5 BW          | 8             | Major OH                       |
| 6    | Motor      | Alignment                       | 10            |                                |

58) Company : SABIC/ SAUDI KAYAN  
Project : PHENOLICS -TA-2016  
Duration : April–May 2016 (35 Days)  
Manpower : 120 no's  
Contact Person : Mr. Ramesh  
Senior Planning Engineer T/A & Central Maintenance

| SR # | EQUIPMENT  | MANUFACTURER / MODEL | EQP# | SOW      |
|------|------------|----------------------|------|----------|
| 1    | Compressor | Cameron              | 1    | Major OH |
| 2    | Pumps      | Lube Oil Pumps Main  | 2    | Minor OH |

|   |           |                                   |    |          |
|---|-----------|-----------------------------------|----|----------|
| 3 | Blower    | CALLIDUS, JOHN ZINK               | 4  | Major OH |
| 4 | Conveyors | DONG YANG P&F                     | 4  | Major OH |
| 5 | Elevators | DONG YANG P&F NAB Bucket Conveyor | 2  | Major OH |
| 6 | Motor     | Alignment                         | 10 |          |

59) Company : AL-BAYRONI - SABIC  
Project: LSTKJobs-Rotating Ammonia/ Urea/ Utility Plants, TAM Jan-Feb 2016.  
Contact Person : Mr. Virendra M.Gupta  
Rotating Equipment Engineer – Maintenance Dept.

| SR # | EQUIPMENT                                            | MANUFACTURER / MODEL              | SOW                       |
|------|------------------------------------------------------|-----------------------------------|---------------------------|
| 1    | Condensing turbine                                   | 7CL-8 /MHI                        | PM and OST                |
| 2    | Horizontal Split centrifugal compressor              | 4M8-6 /Dresser- Clark             | PM and Bearing inspection |
| 3    | Barrell type centrifugal compressor                  | 553B12-10 /Dresser- Clark         | PM and Bearing inspection |
| 4    | Condensing turbine                                   | 7CL-8 /MHI                        | PM and OST                |
| 5    | Barrell type centrifugal compressor                  | 2BC7-6 /Dresser-Clark             | PM and Bearing inspection |
| 6    | Extraction-condensing turbine                        | 5EH-7 /MHI                        | PM and OST                |
| 7    | Barrell type centrifugal compressor                  | 2BC9 /Dresser- Clark              | OH                        |
| 8    | Barrell type centrifugal compressor                  | 2BF9-8 /Dresser- Clark            | OH                        |
| 9    | Condensing turbine                                   | 7CL-8 /MHI                        | PM and OST                |
| 10   | Horizontal Split centrifugal compressor              | 4M8-7 /Dresser-Clark              | OH                        |
| 11   | Horizontal Split centrifugal compressor              | 3M7/Dresser-Clark                 | OH                        |
| 12   | Extraction-condensing turbine. Impulse-Reaction type | DEX620152237 /General Electric    | PM and OST                |
| 13   | Horizontal Split centrifugal compressor              | 3M4-3 /Dresser-Clark              | PM and Bearing inspection |
| 14   | Barrel type centrifugal Compressor                   | 553B10-8 /Dresser-Clark           | PM and Bearing inspection |
| 15   | Barrel type centrifugal Compressor                   | 161-10-4491 /Dresser-Clark        | Major OH                  |
| 16   | Sea Water Pump                                       | 36ALV /Ingersoll-Rand(Flowserve)  | OH                        |
| 17   | Fresh Water Pump                                     | 24X32S /Ingersoll-Rand(Flowserve) | OH                        |

60) Company : SIPCHEM  
Project : IMC plant shutdown  
Duration : October 2015 (22Days)  
Contact Person : Mr. Sergio Villa Turnaround Manager

| SR # | EQUIPMENT | MANUFACTURER/MODEL | NUMBER OF EQUIPMENT | SOW |
|------|-----------|--------------------|---------------------|-----|
|------|-----------|--------------------|---------------------|-----|



شركة يس ي م يتش للخدمات الصناعية المحدودة

**Yes Yem Yech Industrial Services Co. Ltd.**

C.R. No.: 2055011199 س. 2055011199

Paid up Capital: SR. 4,000,000. رأس المال المدفوع 4,000,000 ريال سعودي

انشاء وتشغيل وصيانة وتقديم الاعمال الفنية للمنشآت الصناعية

Operations - Maintenance - Industrial Construction & Support Services

|   |                 |                |          |    |
|---|-----------------|----------------|----------|----|
| 1 | Finfans42 units | Moore fans LLC | 42 units | OH |
|---|-----------------|----------------|----------|----|

61) Company : TASNEE  
Project : Rotating Equipment Maintenance Job during HDPE TAM2014.  
ContactPerson : Mr. Abdulaziz AlAbdullah

| SR # | EQUIPMENT                 | MANUFACTURER / MODEL                                                 | NUMBER OF EQUIPMENT |
|------|---------------------------|----------------------------------------------------------------------|---------------------|
| 1    | Pumps                     | EGGEREO10-350HT4LB6B(CentrifugalPumps)                               | 5                   |
| 2    | Decanter Centrifuge       | ANDRITZ Solid Bowl Centrifuge A11-2,5                                | 3                   |
| 3    | Reactor Agitators         | EKATO HWL-2200-N                                                     | 4                   |
| 4    | Reactor Agitators Gearbox | FLENDER EKF-2V-11-130-EK-EK-170 / H2RV-11 (Parallel Helical Gearbox) | 4                   |
| 5    | Nitrogen Compressors      | B.BILLE HN 1120-500 SEE Espey dir. Pos, LS                           | 2                   |
| 6    | Refrigeration Compressors | YORK Deutschland GmbH                                                | 2                   |
| 7    | NaturalLineExtruders      | KOBELCO LCM 500H                                                     | 1                   |
| 8    | Rotary Feeders            | GEA NLRO A/S, COPERION                                               | 7                   |
| 9    | Pellet Dryer              | GALA Centrifugal Pellet Dryer 7048 LDW                               | 2                   |
| 10   | Vibrating Screen          | TECHNOVENANZETTI VIBRAZIONIScreen VML200                             | 1                   |
| 11   | Screw conveyor            | A.J. Kollemann GMBH                                                  | 3                   |

62) Company : TASNEE  
Project : Carbon Black Line Extruder revamping activities  
Duration : October 2014  
ContactPerson : Mr. Muhammad Fakruddin  
Contracts Engineer

| SR# | PLANT | EQUIPMENT                  | MANUFACTURER/MODEL |   |
|-----|-------|----------------------------|--------------------|---|
| 1   | HDPE  | Carbon Black Line Extruder | KOBELCO            | 1 |

63) Company : SAUDI KAYAN-SABIC  
Project : Overhauling Services - Phenolic T/A April 2013  
ContactPerson : Mr. Asif Raza  
Mechanical Engineer, Saudi Kayan

| SR # | EQUIPMENT | MANUFACTURER / MODEL                       | NUMBER OF EQUIPMENT |
|------|-----------|--------------------------------------------|---------------------|
| 1    | Pumps     | NIKKISOSP48C-K4 /FlowserveGeneral Electric | 6                   |
| 2    | Agitators | EKATO HWL2180 N                            | 8                   |

|   |                          |                                                                     |    |
|---|--------------------------|---------------------------------------------------------------------|----|
| 3 | Blowers (ID, FD Blowers) | CALLIDUS,JOHNZINK, TONGYANGMAGIC/<br>S&T Corporation                | 11 |
| 4 | Fin Fan (Belt Driven)    | S & T Corporation                                                   | 4  |
| 5 | Centrifuge               | ANDRITZ Separation GmGH A11 - 3S                                    | 8  |
| 6 | Conveyors                | DONG YANG P&F                                                       | 11 |
| 7 | Compressors              | ELLIOTT Air compressors (Integral Geared<br>Centrifugal Compressor) | 1  |
| 8 | Elevators (Bucket)       | DONG YANG P&F NAB Bucket Conveyor                                   | 2  |
| 9 | Vibrator Screen          | DONG YANG P&F BPA Conveyor                                          | 2  |

64) Company : SAUDI KAYAN -SABIC  
Project : Machinery Overhauling Polycarbonate T/A April 2013  
Contact Person : Mr. Asif Raza  
Mechanical Engineer, Saudi Kayan

| SR # | EQUIPMENT                | MANUFACTURER /MODEL                                | NUMBER OF EQUIPMENT |
|------|--------------------------|----------------------------------------------------|---------------------|
| 1    | Pumps (Canned Pump)      | NIKKISOSP48C- K4/Flowserve<br>General Electric     | 49                  |
| 2    | Agitators                | EKATO HWL2180 N                                    | 24                  |
| 3    | Blowers (ID, FD Blowers) | CALLIDUS, TONG YANG MAGIC                          | 24                  |
| 4    | Fin Fan (Belt Driven)    | S & T Corporation                                  | 2                   |
| 5    | Pelletizers              | DONG YANG P&F                                      | 8                   |
| 6    | Screw Conveyors          | DONG YANG P&F                                      | 14                  |
| 7    | Centrifugal Compressors  | ATLAS COPCO Compressor<br>Centrifugal PCS Services | 4                   |
| 8    | Screw Compressor         | HOWDEN Screw Compressor                            | 2                   |
| 9    | Extruders                | JSW TEX 140α - 17.5 BW                             | 8                   |
| 10   | Reciprocating Compressor | ATLAS COPCO                                        | 2                   |



# Extruder Specialization



**SMH** Manufacturing & Industrial Services Co Ltd  
*Rotating Equipment Specialist*

## **Our Specialization in Extruder Services**

**Extruder being critical/capital equipment of Polymer Plants, SMH have gained comprehensive knowledge and developed a dedicated team of highly experienced and certified professionals who can take care of maintenance services related to Extruder train including Chamber & Screw removal and replacement, Gear box, Melt Pump, Palletizer, Screen Pack Changer, Die plates, Diverter Valves etc.. Of brands like JSW, Kobelco, Coperion, Farrel Pomini. SMH have successfully completed extruder overhaul projects for Polymer Plants with our valuable customers SABIC Affiliates namely SAUDI KAYAN, SAMAC, IBN ZAHR and TASNEE, S-CHEM, etc.**

## **Why SMH?**

- ❑ Posses trained and certified professionals from Original Equipment Manufacturer Japan Steel Works (JSW).**
- ❑ SMH mastered the services of extruders in the past 8 years**
- ❑ Shortening the shutdown duration resulting to start the production earlier than the estimated time**
- ❑ Optimizing Maintenance cost**
- ❑ Provided Quality maintenance resulted in achieving minimum MTBF**

# **Our Facility**

**On the path to achieve our objectives under Saudi Vision 2030, SMH newly built a world class state-of-art Workshop facility in Support Industrial Area, Section-3, Al-Jubail, which shall be equipped with CNC Machines, Rotor Balancing Machines, Chrome Plating, HVOF facilities etc. for catering manufacturing of spares, repair/ refurbishment of Rotating Machinery parts.**

**This new facility will enable us to address all rotating equipment requirements quickly and efficiently, moreover it will save time and optimize costs to our prestigious Clients**

**This advanced technology machine shop shall consist of:**

- ✓ **Schenck make - 20 Tonnes Balancing Machine**
- ✓ **Computer Numerical Control Machines (CNC)**
- ✓ **Centrifugal Casting Machine for white metal bearing**
- ✓ **HVOF, Hard Chroming etc. Repair Facilities**
- ✓ **Mechanical and Electrical Run-out Check**



# **Our Experiences in Extruders**

| <b>Client</b>                 | <b>Plant</b>                        | <b>Make</b>          | <b>No of Extruders</b> | <b>Year of Execution</b> |
|-------------------------------|-------------------------------------|----------------------|------------------------|--------------------------|
| <b>Saudi Kayan,<br/>SABIC</b> | <b>POLY<br/>CARBONATE<br/>PLANT</b> | <b>JSW Extruder</b>  | <b>8 ( 3 Times)</b>    | <b>February 2020</b>     |
|                               |                                     |                      |                        | <b>April 2016</b>        |
|                               |                                     |                      |                        | <b>February 2013</b>     |
| <b>SAMAC</b>                  | <b>PMMA</b>                         | <b>JSW</b>           | <b>1<br/>(4 Times)</b> | <b>January, 2021</b>     |
|                               |                                     |                      |                        | <b>April, 2020</b>       |
|                               |                                     |                      |                        | <b>July, 2019</b>        |
|                               |                                     |                      |                        | <b>November, 2018</b>    |
| <b>IBN ZAHR</b>               | <b>PP1 Line 1</b>                   | <b>Farrel Pomini</b> | <b>1</b>               | <b>February, 2020</b>    |
| <b>SAUDI KAYAN</b>            | <b>PP Line 1 and Line 2</b>         | <b>JSW</b>           | <b>2</b>               | <b>November, 2019</b>    |



# **Our Experiences in Extruders**

| <b>Client</b>      | <b>Plant</b>                                      | <b>Make</b>     | <b>No of Extruders</b> | <b>Year of Execution</b> |
|--------------------|---------------------------------------------------|-----------------|------------------------|--------------------------|
| <b>TASNEE</b>      | <b>PP Line 1 and 2</b>                            | <b>COPERION</b> | <b>2</b>               | <b>March , 2019</b>      |
| <b>IBN ZAHR</b>    | <b>PP 3 Line 5</b>                                | <b>KOBELCO</b>  | <b>1 ( 2 Times )</b>   | <b>December, 2018</b>    |
|                    | <b>PP3 Line 6</b>                                 |                 |                        | <b>October 2021</b>      |
| <b>TASNEE</b>      | <b>HDPE Black Line<br/>(Capacity Enhancement)</b> | <b>KOBELCO</b>  | <b>1(2 Times)</b>      | <b>September, 2018</b>   |
|                    |                                                   |                 |                        | <b>May 2021</b>          |
| <b>SAUDI KAYAN</b> | <b>PP Line 1</b>                                  | <b>JSW</b>      | <b>1</b>               | <b>Nov-Dec, 2017</b>     |
| <b>SCHEM</b>       | <b>POLYMER PLANTS –<br/>HDPE, LDPE &amp; PP</b>   | <b>COPERION</b> | <b>3</b>               | <b>October, 2016</b>     |
| <b>TASNEE</b>      | <b>HDPE Black Line</b>                            | <b>KOBELCO</b>  | <b>1</b>               | <b>May, 2015</b>         |
| <b>TASNEE</b>      | <b>HDPE Natural Line</b>                          | <b>KOBELCO</b>  | <b>1</b>               | <b>October, 2014</b>     |

# **Experience in Extruders**

## **Saudi Kayan Polycarbonate Extruder O/H Train 1 & 2**

|        |                                |
|--------|--------------------------------|
| Make:  | <b>Japan Steel Works (JSW)</b> |
| Model: | EX-95520<br>EX-96510           |

### **Major Activities:**

Major overhauling of Train 1 & Train 2 Extruder and its components.

### **Description:**

- Major overhauling of Diverter Valve
- Major overhauling of Melt Gear Pump
- Major Overhauling and replacement of Gear reducer.
- Major Overhauling of Pelletizer

# **Experience in Extruders**

## **SAMAC**

Make: **Japan Steel Works (JSW)**  
Model: TEX 250  
Max. Capacity: 30 Tons / Hr.

## **Major Activities:**

Extruder major overhauling and Wilson Seal overhauling

## **Description:**

- Removal of screw from barrel
- Manual cleaning of screw and barrel.
- Cleaning of SPC cylinders and SPC internals
- Dismantle and cleaning of Die head
- Assembling and alignment
- Major overhauling of Wilson Seal

# **Experience in Extruders**

## **TASNEE PP Line 1 and 2**

Make: **COPERION**  
Model: VT 350  
Max. Capacity: 50 Tons / Hr.

### **Major Activities:**

Major overhauling of Line 1 & Line 2 Extruder and its components.

### **Description:**

- Major overhauling of Extruder including the chamber removal and screw replacement.
- Major overhauling of Extruder Gear Box
- Screen package replacement
- Overhauling of Startup Valve
- Overhauling of Pelletizer
- Cold & hot alignment of Extruder and Gear Box

# **Experience in Extruders**

## **IBN ZAHR PP3 Line 6 SD - October 2021**

Make: **KOBELCO**  
Model: LCM 320 EX  
Max. Capacity: 52 Tons / Hr.

### **Major Activities:**

Major overhauling of Extruder and its components.

### **Description:**

- Major overhauling of Extruder including the chamber removal and screw replacement.
- Major Overhauling of Melt Gear pump
- Screen package replacement
- Overhauling of Diverter Valve
- Overhauling of Pelletizer
- Cold & hot alignment of Extruder and Gear Box
- Alignment of Gear pump and its gear Box



# **Experience in Extruders**

## **IBN ZAHR PP3 Line 5 SD -December 2018**

Make: **KOBELCO**  
Model: LCM 320 EX  
Max. Capacity: 52 Tons / Hr.

### **Major Activities:**

Major overhauling of Extruder and its components.

### **Description:**

- Major overhauling of Extruder including the chamber removal and screw replacement.
- Major overhauling of Extruder Gear Box ( ISHIBASHI Make )
- Major Overhauling of Melt Gear pump
- Major overhauling of Melt Gear pump Gear Box ( SEISA GEAR )
- Screen package replacement
- Overhauling of Diverter Valve
- Overhauling of Pelletizer
- Cold & hot alignment of Extruder and Gear Box
- Alignment of Gear pump and its gear Box

# **Experience in Extruders**

## **TASNEE**

### **Black Line Extruder Capacity Enhance project.**

Make: **KOBELCO**  
Model: LCM 500 H  
Max. Capacity: 50 Tons / Hr.

### **Major Activities:**

Servicing of Mixer chamber & Polymer gear pump of Black line Extruder.

### **Description:**

- Opening mixer chamber
- Removal of 1st mixer chamber assembly
- Removal of 2nd mixer chamber assembly and replace with new
- Disassembly of gear pump
- Assembling of gear pump as per modification
- Install back 1st mixer chamber assembly
- Cold & hot alignment
- Close mixer chamber
- Connect back piping & wiring

# **Experience in Extruders**

## **SAUDI KAYAN PP Shutdown 2017**

### **Overhauling of Line 1 Extruder**

Make: **Japan Steel Works (JSW)**  
Model: **CMP308**

### **Major Activities:**

#### ➤ **Extruder Overhauling –**

Pull out the screws (2 No.) and Replace the damaged screw segments if found, Run out to be measured, Replace the damage seals

#### ➤ **Gear Box –**

Open gearbox top cover, Remove the input shaft for inspection, To check clutch parts, Inspect all gears and check the backlash, To replace bearings of all gears shafts (G1 TO G11), To install all gears shaft with new bearing in gearbox.

#### ➤ **Palletizer overhauling**

Record as found alignment and disassemble the palletizer unit by removing main shaft bearings, Check runout of the shaft, Install new bearings, Replace all the sealing parts by new, Install back palletizer unit on Skid and do final alignment.

# Experience in Extruders

## SCHEM – OCT 2016 TAM

| Unit             | <u>Unit 42/ZSK 380/ HDPE</u>                                                                                                                                                                                                                                                                    | <u>Unit 43/ZSK 380/LDPE</u>                                                                                                                                                                                                                                                                                                                                                                 | <u>Unit 44/ZSK 350/PP</u>                                                                                                                                                                                                                                                             |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Model            | VT 380                                                                                                                                                                                                                                                                                          | VT 380                                                                                                                                                                                                                                                                                                                                                                                      | VT 350                                                                                                                                                                                                                                                                                |
| Max Capacity     | 81 Tons / Hr.                                                                                                                                                                                                                                                                                   | 81 Tons / Hr.                                                                                                                                                                                                                                                                                                                                                                               | 50 Tons / Hr.                                                                                                                                                                                                                                                                         |
| Make             | <b>Coperion</b>                                                                                                                                                                                                                                                                                 | <b>Coperion</b>                                                                                                                                                                                                                                                                                                                                                                             | <b>Coperion</b>                                                                                                                                                                                                                                                                       |
| Major Activities | <ul style="list-style-type: none"> <li>➤ Replace Pre-assembled Screws &amp; Barrels Assembly.</li> <li>➤ Overhauling of Suprex – Planetary gearbox</li> <li>➤ Install New DAV Valve</li> <li>➤ Replacement of Coupling Hub Bolts</li> <li>➤ Overhauling of 42X80 Pelletizer Gear Box</li> </ul> | <ul style="list-style-type: none"> <li>➤ Replacement of Barrel.</li> <li>➤ Inspection of extruder screws by pulling it out.</li> <li>➤ Replacement of Gear box Lube oil/Screen Pack Hydraulic Oil &amp; Pelletizer Hydraulic Oil.</li> <li>➤ Overhauling of Suprex - Planetary gearbox</li> <li>➤ Replace Coupling Hub Bolts</li> <li>➤ Overhauling of 43X80 Pelletizer Gear Box</li> </ul> | <ul style="list-style-type: none"> <li>➤ Overhaul Flender gearbox;</li> <li>➤ Replacement of Barrel sections.</li> <li>➤ Inspection of extruder screws by pulling it out.</li> <li>➤ Install new “reinforced” start-up valves “DAV”.</li> <li>➤ Replace Coupling Hub Bolts</li> </ul> |

# **Experience in Extruders**

## **SAUDI KAYAN Poly Carbonate TAM in Year 2016 & Year 2013**

### **Overhauling Of Twin Screw Extruder ( 8 Nos: )**

Make: **Japan Steel Work (JSW)**

Model: Tex 140a -17.5 Bw

Max. Capacity: 20 Tons / Hr.

### **Major Activities:**

- Removal and Overhauling of Diverter Valve
- Removal and installation of polymer filter cartridge
- Dismantling and Inspection of Left & Right Screws after removing from the Barrel
- Cleaning and Inspection of Barrel
- Cleaning of Screw & Barrel by 40,000 PSI Hydro Jetting Machine And Pneumatic Tools
- Reassembly of Screw & Barrel
- Overhauling of Drive Gear Box & Gear Pumps
- Overhauling of Pelletizer assembly



# **Experience in Extruders**

## **TASNEE HDPE Shut Down –May 2021**

### **Overhauling of Black Line Extruder**

Make: **KOBELCO**  
Model: LCM 500 H  
Max. Capacity: 50 Tons / Hr.

### **Major Activities:**

- Replacement of Extruder Screws
- Major OH of Melt Pump Gear Box ( Planetary Gearbox)
- Gear Pump Gear Reducer Motor Replaced
- Pelletizer Alignment
- Lube Oil (5PK-5312), Hydraulic Oil (5PK-5314), Hot Oil (5PK-5316), Motor lube oil (5PK-5318) consoles
- Train Alignment

# **Experience in Extruders**

## **TASNEE HDPE Shut Down 2015**

### **Overhauling of Black Line Extruder**

Make: **Kobelco**  
Model: LCM 500 H  
Max. Capacity: 50 Tons / Hr.

### **Major Activities:**

- Replacement of Extruder Rotor
- Gear pump Inspection
- Overhauling of Pelletizer
- Lube Oil (5PK-5312), Hydraulic Oil (5PK-5314), Hot Oil (5PK-5316), Motor lube oil (5PK-5318) consoles
- Overhauling of Blower 5AB-5301
- Inspection of Pellet Dryer 5S-5303
- Train Alignment

# **Experience in Extruders**

## **TASNEE HDPE TAM 2014**

### **Overhauling of Natural Line Extruder**

Make: **Kobelco**  
Model: LCM 500 H  
Max. Capacity: 50 Tons / Hr.

### **Major Activities:**

- Inspection of Rotor, Chamber, Hopper section of the Extruder
- Cleaning of Rotor by 40,000 PSI Hydro Jetting Machine
- Inspection of Gear Pump
- Inspection of Extruder Gear Box and Gear Pump Gear Box
- Lube oil, Hydraulic and Heating oil replacement
- Replacement of Pelletizer knives with new ones
- Open RTs and inspection of polymer
- Dryer and classifier inspection
- Train Alignment

# RECOGNITIONS & APPRECIATIONS





# Experience in Extruders





*Thank you*



Date: 1<sup>st</sup> Nov 2021  
SMH Ref: SMH-WS-Q-2021-070

## Unpriced Commercial Proposal

**Attention:**

Mr. Mustafa Syed  
Contracts Engineer  
Saudi Chevron Phillips Co. (S-Chem)  
Al-Fanateer Square, Chamber of Commerce Building, 5th Floor- 512  
Jubail, Kingdom of Saudi Arabia  
Fax: +966 13 358 2208  
Tel: 96613 359 6567  
Email: [syedm@saudichevron.com](mailto:syedm@saudichevron.com)

**Subject:** Site Execution Services for Inspection and Overhaul on Extruder Machines at Unit 42, 43 & 44- SPCO-TAM-2022.

**Your Ref#:** RFQ#25000942

**Dated:** 20<sup>th</sup> October 2021

Dear Sir,

Thank you very much for providing us an opportunity to quote for the subjected services.

We hereby would like to submit our Unpriced Commercial Proposal for "Site Execution Services for Inspection and Overhaul on Extruder Machines at Unit 42, 43 & 44- SPCO-TAM-2022," as per E-mail- Rfq# 25000942 dated 20<sup>th</sup> October 2021.

We hope our proposal suits your requirements, please do not hesitate to contact us for any further clarifications if required.

Assuring you of our best attention and prompt service at all times and look forward to your further instructions.

Thanks and Best Regards,

  
John Ullas Davis

Manager- Techno-Commercial  
Landline: +966 13 342 0505/ Ext. 200  
Mobile: +966 50 544 7657, 53 126 9970  
Email: [johns.davis@smharabia.com](mailto:johns.davis@smharabia.com)



## UNPRICED-COMMERCIAL PROPOSAL

**Subject:** Site Execution Services for Inspection and Overhaul on Extruder Machines at Unit 42,  
43 & 44- SPCO-TAM-2022.  
**Customer Ref#:** RFQ# 25000942  
**Dated:** 20<sup>th</sup> October 2021

### QUOTATION PRICE:

| Sr.#                         | Description                                                                                                 | Total Amount (SAR) |
|------------------------------|-------------------------------------------------------------------------------------------------------------|--------------------|
| 1                            | Site Execution Services for Inspection and Overhaul on Extruder Machines at Unit 42, 43 & 44- SPCO-TAM-2022 | XXX                |
| <b>Total Lump Sum Amount</b> |                                                                                                             | <b>XXX</b>         |
| <b>Amount In Words: XXX</b>  |                                                                                                             |                    |

### Price Summary Table

**Table-1; Price Schedule Summary**

#### **SPCO South-TA 2022, Extruder Works- Site Contractor**

| Unit no.       | Price Table-Ref | Scope Summary                                            | Cost (SAR) |
|----------------|-----------------|----------------------------------------------------------|------------|
| <b>Unit 42</b> | Table-2         | <i>Extruders Works- Site Contractor, Package-Unit 42</i> | XXX        |
| <b>Unit 43</b> | Table-2         | <i>Extruders Works- Site Contractor, Package-Unit 43</i> | XXX        |
| <b>Unit 44</b> | Table-2         | <i>Extruders Works- Site Contractor, Package-Unit 44</i> | XXX        |

|                          |            |
|--------------------------|------------|
| <b>Total Price (SAR)</b> | <b>XXX</b> |
|--------------------------|------------|



**Table-2; Price Schedule - Break Up Costs**

**SPCO South-TA 2022, Extruder Works- Site Workcontractor Package**

| Equipment Ref                                       | SCOW Ref #             | SCOW Brief Description                                                                                                                                                                                                                                                                                                                                                                                                                        | Cost (SAR) |
|-----------------------------------------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| <b>1- Unit 42/ZSK</b><br><b>380</b><br><b>/HDPE</b> | 1.1                    | <b>Overhaul Screws, Barrels &amp; Process Section assemblies;</b> Overhauling of Screw & Barrels that includes all dismantling & Re-assembling of process parts, existing barrels & screws, screen changer, Die Head housing, pelletizer system (assembly & Gear Box), DAV valves, Hydraulic system & other accessories. Replacement of the damaged parts.                                                                                    | XXX        |
|                                                     | 1.2                    | <b>Overhaul Suprex gearbox:</b><br>Replacement of wearable parts at a minimum; Replace Oil. Change all bearings and sealing, check all installed parts as gears and shaft. This job also involves Uncoupling & Recoupling of Motor with Gear Box, solo run testing & alignment of Main Drive Motor. <i>(Motor Dismantling, Overhauling, Installation, Rigging or electrical testing is not part of this scope).</i>                           | XXX        |
|                                                     | 1.3                    | <b>Overhaul Pellet Dewatering Dryers 42X84/85;</b><br>Replacement of Bearings, sprockets & Dry Screens                                                                                                                                                                                                                                                                                                                                        | XXX        |
|                                                     | <b>Sub-Total-(SAR)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                               | XXX        |
| <b>2- Unit 43/ZSK</b><br><b>380</b><br><b>/LDPE</b> | 2.1                    | <b>Overhaul Screws, Barrels &amp; Process Section assemblies;</b> Overhauling of Screw & Barrels that includes all dismantling & Re-assembling of process parts, existing barrels & screws, screen changer, Repair of Any Polymer leaks, Die Head housing, pelletizer system (assembly & Gear Box), DAV valves, Hydraulic system & other accessories. Replacement of the damaged parts.                                                       | XXX        |
|                                                     | 2.2                    | <b>Overhaul Suprex gearbox:</b><br>Replacement of wearable parts at a minimum; Replace Oil. Change all bearings and sealing, check all installed parts as gears and shaft, Repair of Gear Box Bolts. This job also involves Uncoupling & Recoupling of Motor with Gear Box, solo run testing & alignment of Main Drive Motor. <i>(Motor Dismantling, Overhauling, Installation, Rigging or electrical testing is not part of this scope).</i> | XXX        |
|                                                     | 2.3                    | <b>Overhaul Pellet Dewatering Dryers 42X84/85;</b><br>Replacement of Bearings, sprockets & Dry Screens                                                                                                                                                                                                                                                                                                                                        | XXX        |
|                                                     | <b>Sub-Total-(SAR)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                               | XXX        |
| <b>3- Unit 44/ZSK</b>                               | 3.1                    | <b>Overhaul Screws, Barrels &amp; Process Section assemblies;</b> Overhauling of Screw & Barrels that includes all dismantling & Re-assembling of process parts, existing barrels & screws, screen changer, Repair of Any Polymer leaks, Die Head housing, pelletizer system (assembly & Gear Box), DAV valves, Hydraulic system & other accessories. Replacement of the damaged parts.                                                       | XXX        |

|                                        |                        |                                                                                                                                                                                                                                                                                                                                                                                                                            |     |
|----------------------------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| <b><u>350</u></b><br><b><u>/PP</u></b> | 3.2                    | <b>Overhaul Flender gearbox;</b><br><i>Replacement of wearable parts at a minimum; Replace Oil.Change all bearings and sealing, check all installed parts asgears and shaft. This job also involves Uncoupling &amp; Recoupling of Motor with Gear Box, solo run testing &amp; alignment of Main Drive Motor. (Motor Dismantling, Overhauling, Installation, Rigging or electrical testing is not part of this scope).</i> | XXX |
|                                        | 3.3                    | <b>Overhaul Pellet Dewatering Dryers 42X84/85;</b><br><i>Replacement of Bearings, sprockets &amp; Dry Screens</i>                                                                                                                                                                                                                                                                                                          | XXX |
|                                        | <b>Sub-Total-(SAR)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                            | XXX |

|                            |     |
|----------------------------|-----|
| <b>Total Price - (SAR)</b> | XXX |
|----------------------------|-----|

#### **WORK DURATION:**

|                            |                |                                                                                                  |
|----------------------------|----------------|--------------------------------------------------------------------------------------------------|
| ➤ Pre-Shutdown:            | 3 Days         | } <b>24 hours / day</b><br>Day Shift: 06:00 AM to 06:00 PM<br>Night Shift: 06:00 PM to 06:00 AM. |
| ➤ Mechanical Spanner Days: | <b>30 Days</b> |                                                                                                  |
| ➤ Startup Assistance:      | 3 Days         |                                                                                                  |

#### **NOTES:**

1. The work duration is suggested considering that there shall be no delay on the delivery of materials, spare parts, Instructions, Information and /or services from client and that no emergent work or unforeseen conditions at the time of execution shall arise which can affect the overall timeline of any or all of the activities.
2. Any observation or issues found during the job progress shall be reported to SCHEM immediately. SMH shall not take any action unless SCHEM approval/clearance.
3. Any job that arises during the execution not specifically mentioned in initial SOW, which becomes necessary for completion of activities will be quoted as additional job and shall be executed upon Client's confirmation.
4. Any part or component repair/ refurbishment work including Engineering, Drafting, Specialist processes, machining, welding etc. which may be found necessary as a result of inspection during execution, unless specifically mentioned in the SOW shall be responsibility of the client. However, in case if such jobs are required to be performed by SMH then additional cost at actuals plus handling charges with actual timelines shall be provided for SCHEM approval. Also in such scenario if SMH resources needs to be kept idle at site during this repair/refurbishment phase shall be charged on unit rate basis as provided in Commercial Proposal.



5. Any In-situ Machining, Drilling, Tapping if arises during dismantling of specific components or which requires any Third Party Specialized Services, which is not a part of Standard Maintenance Procedures, shall be Client's responsibility. However in case if such jobs are required to be performed by SMH then additional cost at actuals plus handling charges with actual timelines shall be provided for SCHEM approval.
6. If SMH manpower and equipment are held up at site due to any reason not attributable to SMH beyond the above stipulated schedule then the same shall be charged extra based on unit rates as provided in Commercial Proposal.
7. SMH manpower and equipment shall be demobilized from site post mechanical spanner days and small crew with basic tools shall be available for start-up support. Any resources required at site during idle days i.e. between mechanical spanner and start-up days shall be treated as additional and charged at actuals on unit rates based on timesheet.
8. Any scope deletion or equipment is removed from original SOW after mobilization shall not be considered and charged in full for the deleted equipment/scope. If it is decided post award of PO but before site mobilization then Cancellation Clause mentioned in Commercial Proposal shall be applicable.
9. Due to ongoing COVID-19 issue, it is highly expected that there will be limitations on work as per latest Govt. Regulations during Curfew, Friday/Saturday, however, any delays due to such Rules and Regulations which are beyond control of SMH shall be considered unaccountable and informed to SCHEM well in advance.

## **ANNEXURE I**

### **UNIT RATES FOR SMH MANPOWER & EQUIPMENT**

| Sr. No. | Category                          | Unit Rates/Hour (SAR) |
|---------|-----------------------------------|-----------------------|
| 1       | Site In charge                    | XXX                   |
| 2       | Supervisor/ Permit Receiver       | XXX                   |
| 3       | Foreman Rotating/ Permit Receiver | XXX                   |
| 4       | Millwright                        | XXX                   |
| 5       | Fitter/Fabricator                 | XXX                   |
| 6       | Rigger L-2                        | XXX                   |
| 7       | Rigger L-1                        | XXX                   |
| 8       | Store Keeper                      | XXX                   |
| 9       | Safety Officers                   | XXX                   |
| 10      | Site Coordinator                  | XXX                   |
| 11      | Pick Up Driver                    | XXX                   |
| 12      | Electrician                       | XXX                   |
| 13      | Stand by Man                      | XXX                   |

| Sr. No. | Equipment Description                       | Unit rate-<br>(SAR)/12 hrs. |
|---------|---------------------------------------------|-----------------------------|
| 1       | Tools Boxes Mechanical, Rigging, electrical | XXX                         |
| 2       | Tools & Consumable Container (20ft)         | XXX                         |
| 3       | Generator 35 KV                             | XXX                         |
| 4       | Hydro Toquing machine                       | XXX                         |
| 5       | Hydro Jetting machine                       | XXX                         |
| 6       | Mobile Crane ( 90 Ton)                      | XXX                         |
| 7       | Man lift                                    | XXX                         |
| 8       | Forklift (05 Ton)                           | XXX                         |
| 9       | Forklift (10 Ton)                           | XXX                         |
| 10      | Low Bed Trailer                             | XXX                         |
| 11      | Compressor 400 CFM                          | XXX                         |

#### I. **General Terms:**

1. This quotation is valid for 90 days from the date of quotation.
2. This Quotation is submitted for the job Planned in October 2022. If there is any change in the Schedule, the same shall be intimated to SMH 2 Months in advance.
3. This quotation is issued without any obligations and any resulting order is subject to review for acceptance.
4. This quotation is based on the data gathered and received from client as well as the notation and observation made by our technical representatives during the site visit. Any changes to the conditions of the equipment thereafter or at the time of your acceptance of this offer shall allow us to re-evaluate our proposal if necessary.
5. Any future enhancement in the scope of work as may be required or as per request by the client shall be charged separately. Such requests shall be communicated officially, in email or documented as an addition or amendment to the PO prior to execution.
6. SMH reserves the right to plan the equipment and personnel necessary to carry-out its scope of work without causing any delay to the job schedule. Allotment of crew and equipment will be as per SMH plan.
7. This quotation is submitted considering normal situation however in the event of any force majeure situation such as acts of God viz. floods, earthquakes, declared medical emergencies etc. or strikes or acts of War reasonably beyond our control and not able to perform its obligations then SMH shall not be liable for any damages to the client resulting from such failure to perform the project.

#### II. **Payment Terms:**

1. 100% within 30 days from date of submission of invoice, by cheque/TT to our account.
2. Value Added Tax shall be applicable extra at actuals at the time of invoicing
3. No provision is made for retention or proposed price exclude any form of duty or any other taxes or levy which would be for account of customer.



### III. Cancellation Terms:

Cancellation of order is generally not acceptable, Client may terminate this order in whole or in part (equipment scope deletion) after agreement with SMH Industrial Services upon payment of reasonable charges as mentioned below based on all expenses incurred towards mobilization and demobilization, salaries, visa, air ticket, other administrative expenses etc.

| Description       | Cancellation Charges (%) |
|-------------------|--------------------------|
| Post Mobilization | 100 % of Lump Sum Value  |
| 0-1 Week          | 70% of Lump Sum Value    |
| 2-3 Weeks         | 50% of Lump Sum Value    |
| 4-6 Weeks         | 30% of Lump Sum Value    |

### IV. Prepone / Postpone Terms:

1. If the project schedule is prepone or postponed in general from the TAM/SD date as mentioned in PO or agreed during Kick-off Meeting post award of PO, additional 20% of quoted Lump Sum Value shall be charged as premium towards project preparation expenses. Acceptance of revised schedule shall be confirmed subject to availability of resources.
2. In case of project postponement notice within 1 week from the TAM/SD start date, resources planned for the project shall be charged on unit rates basis and timesheets shall be submitted to Client.

### V. Liability Terms :

1. In no event SMH shall be liable for any consequential, incidental, indirect or special damages including loss of use, loss of data, loss of profit or revenue, cost of capital, cost of substitute equipment, facilities or services, downtime cost, whether directly or indirectly, incurred by customer with respect to the Services.
2. In no event SMH's liability to Customer shall exceed the contractual price of the Services.
3. SMH's maximum liability for defective service shall be limited to the cost of re performing the defective service and under no circumstances shall the cost exceed the amount of this service contract.

-----END OF DOCUMENT-----